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The Physico-chemical Constants of Binary Systems in Concentrated Solutions

VOLUME 4

SYSTEMS WITH INORGANIC + ORGANIC OR INORGANIC COMPOUNDS (Excepting Metallic Derivatives)

by JEAN TIMMERMANS

Hon. Professor, Université Libre, Brussels, Belgium

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Preface to Volume 4

In this fourth and last volume, I did collect the data on binary mixtures with at least one inorganic component, the metallic derivatives excepted, as these mixtures were covered in the third volume.

In the preparation of this volume I was struck once more by the negligence of so many authors who repeat, without great accuracy, measurements whose results have already been published many times; this is especially the case with mixtures of water + ethyl alcohol and water + sulfuric acid. Therefore, for the older or less accurate data, I gave here only the bibliographic references, but not the numerical data.

At the end of this volume, I give also some errata which have already been pointed

out to me; and a list of desiderata, that
means a short list of papers that I was still
unable to find: they would interest me, only
if there are in them numerical data about
concentrated binary mixtures or accurate data
on very pure organic compounds; and to anybody
who is able to help me in that matter, I
would be very grateful.

At the end of this long time used for this publication by offset printing, I wish to thank heartily my collaborators of five years, Dr. Lewin and Mrss. Kupkova, Laplanche, Moeyeart and Potache; and all my thanks go also to the Publisher for his care in editing this work.

Brussels July, 1960

Jean Timmermans

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R. WATER + ORGANIC SUBSTANCES, EXCEPTING HYDROXYL DERIVATIVES .

LVIII. WATER + HYDROCARBONS AND HALOGEN AND OXYGEN DERIVATIVES .

Water + Methane ($CH_{i_{\!\!\!4}}$)

Olds, Sage and Lacey, 1942

Dew point .

mol %	P kg	mol %	P kg
	3	87.8°	
0.0408 0.0423 0.0423 0.0427 0.0484 0.0506	635.5 284.4 494.6 564.6 425.5 353.5	0.0630 0.0645 0.0671 0.1278 0.1467	212.7 212.3 140.0 84.8 87.9
	7	1.1°	
0.1692 0.1890 0.2128 0.2301	694.9 426.3 421.9 287.4	0.3394 0.4503 0.6417 1.335	146.8 98.3 64.2 27.2
	10	04.4°	
0.4620 0.4943 0.5336 0.6253 0.7123	637.3 569.8 492.0 361.0 284.2	0.8459 1.120 1.545 2.069 4.281	213.3 140.8 95.0 67.2 30.5
	-	37.8°	
1.206 1.345 1.437 1.671 1.898	702.1 565.6 492.7 362.8 286.9	3.152 4.145 5.899 11.083	143.4 100.6 66.8 34.8
	17	/1.1°	
2.616 2.971 3.154 3.457 4.384	702.2 568.6 497.1 427.1 286.9	5.362 7.106 10.935 25.334	216.0 145.1 89.2 35.1
)4.4°	
5.328 6.082 6.519 7.961	700.8 567.1 496.1 354.8	11.360 22.827 30.267 55.557	212.0 89.9 65.4 34.3
		87.8°	
10.641 12.391 14.889 17.565	607.0 494.7 363.0 282.1	21.287 28.510 40.033 65.459	214.2 147.2 97.0 54.2

Water (H_20) + Ethane (C_2H_6)

Kuenen and Robson, 1899

b.t.	dew point	p boiling point	
14.95 22.95 32.15	V+L ₁ +L ₂ 33.59 40.07 48.81	34,00 40,46 48,81	

(H_20) (b.t.= 100°) + Hydrocarbons

Lecat, 1949

	2nd Comp		Az	
Name	Formula	b.t	%	b.t.
Pentane	C ₅ H ₁₂	36.15	-	34.9
Hexane	C6H14	68.8	-	61.55
Heptane	C7H16	98.4	-	80.0
Octane	CaH18	124.75	-	89.4
Decane	CioHaz	173. 3	-	97.2
Diisoamyl	$C_{10}H_{22}$	160.1	-	96.1
Methyl- cyclohexane	C7H14	101.15	-	81.0
Cyclohexane	C6H12	80.75	91	68.95
Cyclohexene	C6H10	82.75	90	70.8
1.3-Cyclo- hexadiene	C ₆ H ₈	80.4	91	68.9
1.4-Cyclo- hexadiene	C_6H_8	85.8	-	71.3
Camphene	$C_{10}H_{16}$	159.6	-	96.0
Benzene	C6H6	80.2	-	69.25
Toluene	C ₇ H ₈	110.75	80.3	84.43
Mesitylene	C 9H12	164.6	-	96.5

(H_20) + Pentane (C_5H_{12})

Scheffer, 1914

t P (t	riple poir	P ₁	P	
150	22.4	17.3	4.7	22.0
160	27.0	20.3	6.05	26.35
170	32.4	23.7	7.8	31.5
180	38.8	27.6	9.8	37.4
187, 1	44.1	30.7	11.6	42.3

(11 0) 4	· Hexane (C ₆ H ₁						
J				(H ₂ O) + Ac	etylene (C ₂ H ₂)	
Harkins a	and Humphery, 1	916		Villard, 189	07		
σ (L₁/L₂	a) at 25° = 49	.54		t	P dissoc.	t P	dissoc.
				0	5,75	9.6	16.4
(H ₂ 0) + E	Ethylene (C ₂ H ₄	.)		+4.6 7.0	9.4 12.0 (6+1)	15.0	33.0
Villard, 18	397						
t	p dissoc.	t	p dissoc.	(H ₂ O) + Tu	urpentine (C ₁₀	H ₁₆)	
0 7.2 9.6	5.5 12.35 16.35	12.3. 15 17 +1)	12.80 32.85 44.80	Regnault, 1	862		
				v	t L	Þ	
Diepen and	Scheffer, 195	0		66.49	71,62	184.9 185.7	5 5
t	P	t	P	69.86 71.04	73.44 73.50	186,2	1
	L + V			71.08 71.24	73.30 73.26 77.08	186.0 186.1	1
9.5 5.0	49.95 45,40	- 5.0 -10.0	35.90 32.05	75.41 75.33	77,18	231.6 231.7	8
0.0	40,45	_15.0	28, 20	75.94 76.33	$\frac{77.89}{78.02}$	232.1 232.3	2
9.8	C₂ + L 49.95	- 5.0	35,90	76.49 76.52	77.91 77.89	232.4 232.5	0
5.0 0.0	45.10 40.25	-10.0 -15.0	32.00 28.20	81.80 81.87	83.14 83.07	291.1 291.2	d
	L ₁ + L		20,20	81.84 81. 7 4	82.97 82.88 87.45	291.2 291.2 365.3	2 4
9.7 9.0	49.90 49.15	$\frac{3.0}{0.0}$	43.15 40.25	86.03 85.96	87.45 87.27	365.3 365.5	4 5
6.0	46.10	0.0	40.25	88.45	89.92	414.1 414.2	3
P	mol %	Р	mo1 %	87.87 85.34(88.56	sic.) 88.99 90.34	415.8 418.3	7
15	0	2 5°		90.12 93.45	92,45 96,63	420.0 513.5	0
115 (1+1)	+ V 99.70	L +		95.47 99.12	96.40 101.72	514.0 740.7	3
77 57	99.67	93.8 84.5	99.90 99.87	99.18	101.29	740.7	
43 39	99.66 (sic)	63.0	99 .9 0 99 .8 5	65.71	71.61	184.7	0
28	99.72 99.87	56.6 47.2 37.9	99.87 99.89	77.57 94.75	82.99 96.98	349.3 751.3	4
	Co + L	37,9	99.88	99.48 100.41	$101.80 \\ 101.63$	754.3 754.1	1 8
18.0 17.6	C ₂ + L ₃ 53.90 48.50	3.2	7.73	100.45 112.35	101.67 114.19	754.1 1334.2	8 5
17.6 16.9 16.4	43.65 39.90	2.6 2.3 2.0	7.22 7.03	118.89 126.19	120.26 127.55	1630.9 2141.3	4
15.3	33,95	1,6	6.76 6.51	127.44 131.86	128.45 133.42	2120.5 2554.3	8
14.2 12.7	29.60 24.65	1.4 1.2	6.33 6.22 5.96				
8.7	19.60 14.85	0.8 0.6	5.94	.,,			
6.7 5.4	11.82 10.20	0.4 0.2	5.71 5.61	Vezes, 1903			
4.4 3.2	8.94 7.69	0.0	5,54	t	р	t p	
-1.0	5.25	-4.0	4.70	66.1	185 11	9.0 1631	
-3.0	5.07 4.86	-4.0	4.72	77.1 94.8	349 12 751 13	6.5 2141 2.2 2554	
				112.3	1334	L ₁ + L ₂	

								
(H ₂ O) + Be	enzene (C ₆ 1	H ₆)						
Scheffer, 19	14			Harkins and H	umphery, 191	6		·····
				t	σ (L ₁ /L ₂)	t	σ	(L_1/L_2)
t	P L ₁ +	$\frac{P_2}{L_2 + V}$	P ₁	10 20 25	34.98 34.5 2 34.18	30 40		33.82 33.22
150	10.6	5.9	4.7					
160 170 180 190 200 210 220 230 240.1 250.2 260.1 267.8	13.2 16.4 20.1 24.6 29.8 35.9 42.9 50.9 60.35 70.65 82.15 92.7	7.1 8.5 10.2 12.15 14.3 16.7 19.45 22.5 25.95 29.55 33.7 37.35	6.05 7.8 9.8 12.35 15.3 18.75 22.8 27.5 33.0 39.1 46.1 52.4 52.6	$(H_2O) + To$ Harkins and H_2O $G(L_1/L_2)$	lumphery, 19	16		
268.2					lene (C ₈ H ₁₀)		
Young, 1902								
Az :	8.83 %	80.2°		Harkins and H	Humphery, 19	16		
				σ (L ₁ /L ₂) :	at $25^{\circ} = 37.$	60		
Regnault, 18	62							
b.t.	р	b. t.	p	(H ₂ O)(b.1	t.=100°) + F	Halogen de	rivativ	es
	$L_1 + L_2$	_≥ +V			,			
10.10 10.53	54.92 56.03	$\substack{18.01\\19.88}$	83.00 91.49	Lecat, 1949				
10.53 12.38 15.26	61.93 72.34	22.53	104.28		2nd Comp.		Az	
		h +		Name	Formula	b.t.	%	b.t.
b.t.	p	b.t.	p	Methylen	CH ₂ C1 ₂	40.0	98.5	38.1
24.28	107.03	vol % 60.94	500.94	chloride	ChigCig	40.0	70.0	90.1
27.07 28.83	136.93 137.93	69.86 69.93	759.80 759.80	Chloroform	CHC 1 ₃	61.2	97.5	56,15
46.10 46.22	301.45 301.45	70.58 70.93	759.80 759.80	Carbon	CC1 ₄	76.75	-	69.0
46.27 46.34	301.45	72.39 119.14	759.80 3239.86	tetrachloride				
59.44	$301.45 \\ 500.73$	133.33	4866.86	Penta-	C2HCl5	162.0	-	95.9
b.t.	p	b.t.	p	chlorethane				
37.35	206.05	58.87	502.91	Isobutyl	$C_{4}H_{9}I$	122.5	-	96.0
38.27 39.32	212.75 218.85	64.83 64.98	596.86 596.96	iodide				0
45.55 45.58	290.86 290.86	72.59 90,75	758.84 1410.89	Acetylen	C ₂ H ₂ Cl ₂	60.25	98.1	55.3
51.36	371.17 371.17	90.94 91.02	1414.89 1417.09	dichloride cis.		40 25	00.1	45 9
51.43 58.84	502.91	91.43	1426.69	Acetylen dichloride tran	C ₂ H ₂ Cl ₂	48.35	98.1	45.3
b.t.	p	b.t.	p	Propylen	C ₃ H ₆ Cl ₂	96.8	88.0	77.5
90.34	1394.79	119.50	3333.83	chloride	- 5 ~			
90.42 90.52	1403.49 1396. 7 9	119.69 129.74	3350.72 4372.95	Allyliodide	C_3H_5I	101.8	90.0	80.7
105.96 106.36	2274.10 2288.50	129.87 141.41 141.73	4400.24 5944.75	Chlorbenzene	C6H5C1	131.8	-	90.2
106.36 107.03	2291.10 2299.70	141.73	5897, 15	1				

($ m H_20$) + Monofluordichlormethane (CHFC1 ₂)	($H_{2}0$) + Chloroform	(CHC1 ₃)
Banks, Heston and Blankenship, 1954		Tammann and Krige, 19	25
t p t	р	P kg t	(Dv) _{pt} (cc/g)
(17+1) + L ₁ +V	_	Dv melting	of hydrate
0.26 121.0 4.43 0.33 121.6 4.70 0.84 135.6 5.65 0.98 141.3 5.72 1.19 147.0 6.10 1.55 161.3 6.24 1.76 160.8 6.97 2.32 188.4 7.04 2.34 189.1 7.73	243.4 299.3 314.4 391.2 395.6 432.2 450.3 524.6 529.6 616.2	1 2. 145 2. 365 1. 625 +0. 900 -1. 1390 -4. 1740 -6.	0 -0.0280 2 -0.0362 1 -0.0509 8 -0.0629 2 -0.0753
2.70 204.2 7.92	647.5	mark and Alla Minda	1047
t p t	р	Reinders and de Minje	
(17+1) + C + V	-	% b.t.	% b.t.
-3.43 92.1 -1.68 -2.89 93.0 -1.56 -2.74 95.8 -0.91 -2.58 96.2 -0.88 -2.50 96.2 -0.61 -2.09 98.1 -0.21	100.4 101.4 102.9 105.9 105.2 107.4 109.7	$\begin{array}{c cccc} L_1 + V \\ \hline 0.0 & 100.0 \\ 56.9 & 95.0 \\ 74.7 & 90.0 \\ 88.3 & 80.0 \\ 93.7 & 70.0 \\ 96.5 & 60.0 \\ 97.2 & 55.6 \\ \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
t p t	p		
-0.08 536.0 4.45 6 6 6 7 7 7 8 579.0 6 1.78	637.2 644.1 557.8 670.0 677.5 996.9 711.5 723.5	($\rm H_2O$) + Carbon tetra Regnault, 1862 $\rm t$ p $\rm V + L$	t p
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	p 628.4 646.7	7.79 63.49 11.39 75.37 16.75 97.25 20.49 115.69 25.66 146.58	29.12 170.77 34.42 214.67 38.59 256.42 44.59 328.38
0.72 550.9 5.01 1.20 562.4 6.06 6 2.16 583.6 6.56 2.32 587.6 7.08 2.88 601.2 7.95	553.4 681.4 695.6 709.3 733.4 758.2	(H ₂ O) + Ethyliodide Pierre, 1872	(C ₂ H ₅ I)
t p t	р		
$V + L_1 + L_2$	459 1	Az L ₁ + L ₂ + V 6	6° 96 vol %
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	558,1 684,5 714.0 739,3		

(H_20) + Ethylene Chloride ($C_2H_uCl_2$)	Villard, 189	9		
Baranaev, Gilman, Kogan and Rodionova, 1954	t	P diss.	t	P diss.
L V b.t. 0.13 24.8 98.0 0.33 63.0 94.0	-6.0 0.0 +0.48 2.7 3.6	6.5 12.2 12.7 16.7 17.9	5.3 6.1 6.8 10.0	21.8 23.3 26.1 44.3
0.33 63.0 94.0 0.43 66.0 92.3 0.59 70.2 89.3 0.87 91.6 72.0	Tammann and	Krige, 1925		
	t	P diss.	t	Pdiss,
(H ₂ O) + Butyliodide (C _ե H ₉ I)	-20 -24 -29	1064 755 486	-36 -43	195 92
Pierre, 1872				
Az 96° 79 vol % L ₁ + L ₂ + V	Sander, 1912			
	cc t	CO ₂ at t. i in 0.210 c		
($ m H_2O$) + Chlorbenzene ($ m C_6H_5Cl$)		20°		
Bingham, 1907 C.S.T. = 220	25 30 40 50 55	-	19 21 28	. 77 . 77 . 52 . 09
	30	35° 11. 77	13	.57
(H ₂ O) + Carbon dioxide (CO ₂)	40 50 60 70 80	14.82 18.96 22.90 27.18	20 24 22	.00 .64 .50 .62 .85
von Wroblewski, 1885	40	60° 10,88		.798
P cc gaz/1cc H ₂ 0 0° 12.43°	50 60	12.24 14.46	13 15	.72 .28
	70 80	16.80 19. 7 4	17 22	.46 .67
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	90 100	19.74 22.74 26.21	21 27	.67 .16 .85
15 21. 95 13.63	110 120	28.92 30.20	28 33	.79 .90
25 30.55 20.31	60	100° 8.96	5	_
30 33.74 23.25	70 80	10.11 11.05	6	.395 .591
t P diss.(hydrate) t P diss.(hydrate)	90 100	12.65 13.63	10	. 85 . 40
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	110 120	14.88 16.40	16	.31 .78
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	130 140	17.93 19.56	16 17	.89 .71
	150 160	20.58 22.07	17	.49
	170	22.78		-
	Kuenen and Ro	obson, 1899 t	P	سے اسے اسے شدر شہر شدر شدر سے اپنے شدر شدر شدر شدر شدر سے ا
	و جود من مدر می	L ₁ + L ₂ +		
	12	3.85	54.4	
	31	1.2 1.5	72.4 T.C.	

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
8.85 196.81 14.10 247.43 12.07 225.93 22.43 347.17 18.85 299.52 38.35 634.60				
26.87 412.28 33.80 498.74				
Lecet, 1949				
97.2 42.6 Az 100 46.25				
(H ₂ 0) + Ether, (C ₄ H ₁₀ 0)				
Regnault, 1862				
t p t p				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
Kuenen and Robson, 1899				
t P t P				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
de Boer, 1934				
t p t p				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				
- 8.0 128 11.9 319.5 - 7.0 131 12.0 321 - 6.5 134 15.0 365 - 5.2 147 16.0 380 - 4.0 157 18.3 418 - 3.8 158 19.0 430 - 3.1 164 19.9 456 - 2.2 170.5 20.8 462 - 1.9 172.5 25.1 547 - 0.1 188 30.0 655.5 0.0 188 31.6 699.5 + 7.8 266.5 32.4 720 + 7.8 266.5 34.5 785 C ₁ + L ₁ + L ₂ + V : -3.8				

Lecat, 1949			Boutin and Sanf	ourche, 1919		
%	b.t.		8	t %		
98.7 100	34.15 Az 34.6		1 1.0 89.7	3.3 1.3 0 - 5 -	93.5 20 94.4 25 95.4 30	
K lobbie, 1897			- 90.2 - 91.7 1.1 93.0	10 - 15	96.0 25	
% sat.t.	% s	sat.t.				
99.06 -3.5 -4 99.00 -3.5 -4 98.98 0.0 99.02 0.0 98.93 +5.0 98.92 8.0	12.36 11.99 9.92 9.36 8.19	3.5 -4 0.0 0.0 7.5 8.5 2	Hill, 1923 sat.t.	L ₁	g L ₂	
98. 89 14.5 98. 86 14.5 98. 79 18 98. 80 19 98. 80 20 98. 73 20 98. 67 30 98. 38 48 - 49	7.63 1 6.69 1 5.04 3 4.68 3 4.11 4 4.07 5 3.60 6	6 9 9 0 8 9 1 - 52 2 - 63	30 25 20 15 10 0 - 3,83	98,591 98,662 98,736 98,760 98,836 98,922 99,022	5.340 6.027 6.896 7.913 9.040 11.668 12.752	
98.28 51 - 52 98.20 55 - 56 97.90 75 97.67 90 97.29 95	3.41 6 3.12 6 2.98 7 2.90 7 2.70 8	6 - 67 1	Hill, 1923			
			%	t	d	
Jüttner, 1901	ومن سم سم سمانسواسياسياسيان المناشات المناشات المناسبات	·	98.591 98.662	30 25 20	0.70763 0.71309 0.71835	
mol % sat.t.	mo1 %	sat.t.	98.736 98.760 98.836	15 10	0.72404 0.72998	
0.810 26 0.926 20 1.042 15	1.283 1.445	6 0	5.340 6.027 6.896	30 25 20	0.98505 0.98508 0.98478	
0saka, 1910			7.913 9.040	15 10	0.98405 0.98219	
% sat.t.	% sat	<u>.t.</u>				
5.07 30.4 5.33 28.0 5.60 26.0 5.90 24.0 6.28 22.0 6.56 20.0 7.00 18.0 7.33 16.4 7.73 14.5 7.98 13.5 8.07 12.4	8.13 8.69 9.07 9.22 9.67 10.16 10.70 11.18 11.25 11.61	12.3 10.0 8.6 7.9 6.3 4.5 3.2 1.1 0.0				
% sat,t,	% sa	t,t.				
$\begin{array}{cccc} 11.60 & 0 \\ 10.05 & 5 \\ 8.72 & 10 \\ 7.60 & 15 \end{array}$	6.61 5.77 5.11	20 25 30				

(H ₂ O) (b.t.	= 100) +	Ethers			(H ₀ 0) +	Methylal (C	- H-O.)	
Lecat, 1949					ŀ		311802)	
	2nd Comp	•	Az		Bourgom, 1	924 	م نمر سب بن بن مراجع <u>سبات الم</u>	
Name	Formula	b.t.	%	b.t.	%	sat.t.	× ×	sat.t.
Ethylpropylether	C ₅ H _{1 2} O	63.85	96	60.0	37.23 40.16	148.9 154.0	58.04 65.34	160.2 159.5
Ethyl tert. butyl ether	$C_6H_{14}0$	7 3	94	65.2	50.46 50.64 55.84	159.8 159.4 160.2	72,45 86,90 91,08	157.5 104.5 55.0
Ethyl tert. amyl ether	C7H160	101	87	81.2	57.34	160.3		
Propyl ether	C6H140	90.1	90	78.1	tt	P	t	P
Isopropyl ether	C ₆ H _{1 1} 0	69.0	96.4	61.4	Ì	sat.t.	55,8 %	
Butylether	C 8H180	142.9	62	93.5	1			
Isobutylether	C 8H1 80	122.3	7 4	88.6	159 157,25	21 34	153.75 150	52 64
Amylether	C ₁₀ H ₂₂ O	187.5	35	98.4		04	130	04
Isoamylether	C ₁₀ H ₂₂ O	173.2	44	97.3				
Methyl propyl- ether	$C_{4}H_{10}0$	38.95	98.45	38.2	100,00	b.t.	% 	b.t.
Methyl tert. butyl ether	C5H120	55	96	52.6	98.60 96.80 94.30	42.3 42.05 42.20 42.44	19.54 11.42 0.00	57 68 100
Methyl tert. amyl ether	C ₆ H ₁ 40	86	93.3	73.8	# %	f.t.		f.t.
Methyl allyl- ether	С ₄ Н ₈ О	134.6	69.0	92.5	0.00 5.26 10.11	0.00 -1.35 -2.77	26.52 29.98 33.60	- 8.60 - 9.80 -10.78
(H ₂ O) + Viny Shostakovski a					11.79 12.66 15.73 17.44 19.15 20.23	-3.31 -3.54 -4.54 -4.98 -5.79 -6.10	36.23 42.98 54.17 68.12 85.58 95.72	-11.00
mo1	%	b.t.			20.60 23.12	-6.38 -7.54	97.53 97.90	-12.80 -15.50
0. 58.	0	100 76.7	Az		25.20	-8.10	100.00	-104.8
100.	U 	93.8			Schwers, 191	1		
(H ₂ O) + Ethyl	ether hydi	robromide	(C ₄ H ₁	10Br)	t	d	t	d
Maass and Russe	11, 1918				10, 1435	1	19.9912 %	
%	f.t.	%		f, t.	17.5 27.4 33.0	0.99747 0.99412 0.99186		.99832 .99362
100 -	40.5	90.6			30.0245		100 %	
99.1 - 97.6 -	40.5 42.5 46.0 49.5 53.7	89.9 89.4 88.6	-!	50.0 (1+1) 54.5 50.0 53.2 56.5 55.5	19.9 25.7	0.99046 0.98675	12.4 0	. 89496 . 87729
94.6 - 93.5 - 92.9 - 92.3 -	53.7 52.5 56.2 57.5 63.0 54.7	87.9 87.4 86.1 85.9 83.8	-: -:	56.5 55.5 59.6 61.5 72.5				

Bourgom, 1924					(H ₂ O) (b.t. =	= 100°) +	Acetals		
<u></u> %			 		Lecat, 1949				
,	169	-	0°			2nd Comp.		Az	:
100.00	0.865		0.88546		Name	Formula	b.t.	%	b.t.
99.04 98.00	-		0.88800 0.89054	ļ	Acetal	C6H1402	103.6	85.5	82.5
97.30 97.00	0.87	310	0.89235 0.89298	3	Dimethylacetal	C4H1002	64.3	96.7	61.0
30.16 21.00	0.985 - 0.996		0.99501 0.99747 0.99928	,	Dipropylacetal	C 8H 1 8O 2	147.7	63.4	94.7
6.20 0.00	0.999		0.99907		Dibutylacetal	$C_{10}H_{22}O_{2}$	188.8	33.7	98.7
1			.98427		Diisobutylacetal	$C_{10}H_{22}O_{2}$	171.3	47.5	97.4
L	2 95	5. 7 % 0	. 8 7 636		Diamylacetal	$C_{12}H_{26}O_{2}$	225.3	14,5	99.8
%		n			Diisoamylacetal	C ₁₂ H ₂₆ O ₂	213.6	21.2	99.3
0.00 1. 100.00 . 96.90 .	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	26 1.3373 53 .3595 58 .3607	7 .36 1 .36		(H ₂ 0) + Varia Lecat, 1949				
15.30	34037 .3420 34780 .3498	9 .3464	8 .34	972 747		2nd Comp		A	z
					Name	Formula	b.t.	%	b.t.
(HaO) (b.	t. = 100°)	⊦ Formals			Methylisobornyl ether	C ₁₁ H ₂₀ 0	192.4	32	98,55
Lecat, 1949					Ethylisobornyl ether	C12H220	203,8	25	98,9
	2nd Comp.		A 2	- 	Methylterpinyl ether	C ₁₁ H ₂₀ 0	216,2	17	99.3
Name	Formula	b.t.	%	b.t.	Anisole	C7H80	153.88	55	95.5
Methylal	C ₃ H ₈ O ₂	42.3	98.7	42.08	Phenetole	$C_8H_{10}O$	170.45	43	97.3
Methylethyl	C ₄ H ₁₀ O ₂	65.9	95.6	61.6	Propylphenylether	C ₉ H ₁₂ O	190.5	32	98.5
formal	04.11 002	3017	,		Veratrole	$C_8H_{10}O_2$	206.8	23.3	99.0
Ethylpropyl formal	C6H1402	113.7	80	86.3	Resorcinol methyl ether	C ₈ H ₁₀ O ₂	214.7	20	99.25
Propyl formal	C7H1602	137.2	64	92.4	Resorcinol ethyl ether	$C_{10}H_{14}O_{2}$	235.4	9	99.7
Isopropyl formal	C7H1602	129	7 9	80	Anethole	C ₁₀ H ₁₂ 0	235.7	8	99.7
Butyl formal	C9H20O2	181.8	38	98.2	Diphenyl ether	C, 2H, 00	259.0	3, 25	99.95
Isobutyl formal	$C_9H_2_00_2$	163.8	51	96.8	Eugenol methyl ether	C ₁₁ H ₁₄ O ₂	254.7	3.8	99.85
Amyl formal	C11H24O2	221.6	6.9	99.2	Isoeugenol methyl ether	$C_{11}H_{14}O_{2}$	270.5	1.2	99.95
Isoamyl formal	$C_{11}H_{24}O_2$	211	22.2	99.0	Safrole	C10H1002	235,9	7.7	99.72
Ethylal	C5H12O2	87.95	90	75.55	Isosafrole	C ₁₀ H ₁₀ O ₂	252.0	4,0	99.8

(H ₂ O)) + Acet al	(C ₆ H ₁ µO ₂)	2		Maass and	Boomer, 1922		
Beckmar	nn, 1888				K	f.t.	%	f.t.
1.012 3.173 5.222	f.t -0.1 -0.5 -0.8	70 8. 00 11 20 13	586 - .75 - .35 -	f.t. -1.340 -1.850 -2.100	0 6.0 11.4 16.4 21.3 24.9 28.0 34.0	0 - 0.2 + 6.7 + 9.4 + 10.4 + 10.7 + 10.5 + 10.5	51.0 55.0 62:0 63.5 65.5 70.5 78.5 92.0	+ 9.0 + 8.4 + 7.5 + 7.2 + 6.9 + 6.0 + 4.3 - 0.9 -11.3
(H ₂ O)	+ Ethylen	e oxide (C ₂	Н ₄ О)		46.0	+ 9.5	(6+1	
Kaplan	and Reforma	atskaia, 193	7		Mazzucchel	li and Armena	nte, 1922	
- A	5°	p 10° 20°		0° 20°	8	f.t.	mol %	f.t.
5.97 9.43 12.72 16.09 25.57 30.82 42.21	111.3 13 171.4 26 216.1 26 266.5 33 406.1 42 543.5 55	32.9 190.8 93.3 292.5 60.5 372.2 36.7 473.0 77.4 672.4 53.4 – 19.1 –	111.1 13 171.1 20 215.7 26 266.0 33 405.4 47 544.5 55	2.7 190.4 2.9 291.8 0.0 371.2 6.0 471.7 6.3 670.2 2.0 -	0 2.03 3.96 4.06 4.32 4.76 5.41	0 -0.77 -1.43 -1.36 -1.80 -1.87 -2.23 E	2.62 4.90 9.61 16.23 23.52 42.40 58.92 75.10	+ 0.7 7.1 11.4 12.4 10.5 8.4 6.4 4.7
t	and Popper,	1950 % V	mo L	1 % V		Propylene oxi	de (C ₃ H ₆ 0)	
11.5	97.95	760 mm 99.70	05.1		Lecat, 194	*************************************	b.t.	
11.7 11.8 11.9 12.0 13.2	97.15 95.8 95.05	99.70 99.73 99.59 99.61 99.54 99.39	95.1 93.3 91.0 89.0 87.5 61.5	99.27 99.34 99.00 99.05 98.88 98.53		99.0 100	33.8 Az 34.1	
13.7 14.3 15.0 15.1 16.4 31.0 31.5 37.6 50.0	79.19 75.5 64.5 48 43 40 20.5 17.8 14.6 9.3	99.36 99.39 99.36 99.35 99.25 98.56 98.34 97.42 93.7	51.0 43.2 27.4 23.2 21.0 9.5 8.2 6.5 4.0	98.33 98.45 98.53 98.45 98.41 98.16 96.48 95.95 93.7 86.0	(H ₂ 0) + Wolf, 1943	Tetrahydrofur 3	ane (C _u H ₈ 0)	
25.4	00.7-	2.3 atm.				100 20° 90	27.64 28.10	
35.4 35.4 - 37.5	98.59 98.64 97.80 95.30	99.73 99.70 99.55 99.33 4.4 atm.	96.56 96.68 94.85 89.3	99.34 99.27 98.90 98.36		75 50 25 10 0	28.65 29.17 30.64 34.11 72.60	
56.5	7.9	0.99	82.7	97.58				

Critchfi	eld, Gibson	and Hall	, 1953		(Н _я	,0) + Va	ria			
%					Leca	t, 1949				
	2 0 °	25°	30°	35°	 		2nd Comp		A	z
.0	80.37	78.48	76.75 70.15	74.95	Name		Formula	b.t.	%	b.t.
10 20 30	73.73 66.46 58.42	71.76 64.60 56.59	63.02 55.24	68.68 61.64	Diox	ane	$C_{\mu}H_{g}O_{z}$	101.3	81.9	87.5
40 50	58.42 49.77 41.21	56.59 48.22 39.96 31.97	46.91 38.77	53.88 45.65 37.75	Diox	olane-1,	3 C ₃ H ₆ O ₂	7 5	93.3	7 3
60 70	33.04 25.45	24.62	31.04	30.24 23.39	Trio	xane sym	. C ₃ H ₆ O ₃	114.5	70	91.4
80 90	18.75 12.90	18.25 12.59	24.08 17.77 12.36	17.38 12.05						
95 100	10.24 7.58	9.97 7.39	9.74 7.25	9.58 7.16	Wate	r + Diox	ane (C ₄ H ₈ O ₂)		
78		n _D			Hete	rogeneou	s equilibria	•		
	20°	25°	30°	35°	Mel		1000			
0 10	1.3330 .3433	1.3324	1.3320 .3419	1.3314 .3412	Mako	vietski,	1908 ol %	n		
20 30	.353 7 .363 7	.3527 .3622	.3519 .3611	.3510 .3600		L	V V	p		P ₁
40 50 60	.3724	.3711	.3695	.3683 .3753		100	100	120.5		0
70 80	.3872 .3934 .3987	.3854 .3915 .3967	.3837 .3896 .3949	.3819 .3878 .3938		95 90,04	80.84	142.1 153.8		27.24 43.83
90 95	.4033 .4050	.4011 .4028	.3989	.3967		80.05 70.07	71.51 63.21 59.34	164.7 168.6		60.59 68.55
100	.4068	.4045	.4022	.4000	Į.	60.46 55.08	56.95 56.00 55.08	169.6 169.6		73.03 74.64
						49.94 39.94 30.03	53.66 51,54	169.6 167.9 165.5		76,14 77,80 80,21
(H ₂ O)	+ Methyl-2-1	furane ((C ₅ H ₆ O)			20.08 15.03	47.87 44.08	159.0 152.7		82.90 85.40
Lecat, 1	1949					10.06 7.52 5.00	38,24 33,84 27,48	142.6 134.2		88.05 88.77
	%	b	.t.			0.00	0.00	124.0 91.9		89.92 91.91
	100	5	8.2 Az 4.2		Gada	skin and	Makovietski	, 1909		
			····		Az	87.7°	(767 mm)	48 mol %		
Smith an	d Laboute,	1952			-	50°	(170 mm)	56.3 mol	%	
t			1 %							
		L	<u>v</u>		1	k, 1950	,			
96. 90.	2	below 6	9 25 25		m	ol %	р	P1	p ₂	
89. 83.	8	" 6 " 6	39			4	30.0	25° 23.1	6.9	
79. 76. 73.	1	" 6 " 6	51 55 63			11 23	37.5 43.9	$\frac{21.0}{19.3}$	16.5 24.6	
69. 60.	9 8	" 6 " 6	63 67 80 84			28 55 76	37.5 43.9 45.5 47.7 47.5 45.2 42.7	18.4 16.7 14.7	24.6 27.1 31.0 32.8	
59. 57.	3	86	86		1	90 95	45.2 42.7	10.9 6.6	32.8 34.3 36.1	
58, 60, 62.	0 7	99 99 100	91 94 100		===					
			100							
					1					

Bacarella, Fin	ich and Grun	wald, 1956			Properties o	f phases .	Density		
	%	р			Herz and Lor	entz 1820			
5	25°	41,97			%	d			d
7	0.50 0.00	46.18 36.18			<u> </u>		17.5°		
					0 30 50	0.9987 1.0277 1.0400	70 90 100)	1.0436 1.0391 1.035 7
Gillis and Del	aunais, 193				%			d	
mo1 %	b.t.	mol %		b.t.		2 0°	40°	60°	80°
100 96.97 94.07 90.23 80.04 76.70 70.15	101.4 91.6 89.3 88.2 87.6 88.0 88.2	61, 15 50, 86 43, 22 40, 81 34, 37 25, 73 9, 382		88.3 88.8 90.0 90.2 91.6 92.5 96.2	10 40 50 60 70 90 100	1.0098 .0336 .0386 .0413 .0413 .0375 .0330	1.0023 .0206 .0238 .0248 .0242 .0176 .0111	0.9925 1.0060 .0080 .0078 .0060 0.9956 .9895	0.9811 .9900 .9916 .9899 .9869 .9748 .9674
Schneider and			4		Gillis and D	elaunais,	1934		
mol % L V	b.t.	mol L	% V	b.t.	mol %	đ	mo1	8	đ
0.8 10.3 2.4 22.7 5.2 33.5 9.1 39.0 13.5 42.5 20.3 44.3 29.8 46.0	f.t. 0.056 0.079 0.11	\$4.2 54.0 68.8 86.5 96.3 100 \$ \$ 34.67 47.23 47.24	49.0 49.3 52.3 61.8 79.0 100	430 435	100 96.97 94.07 90.23 80.04 66.47 61.15 ———————————————————————————————————	1,0	0°	22 81 37 73 382 d 25°	1.03614 .03601 .03140 .02685 .02032 .00556
1.01 - 1.60 - 2.55 - 4.88 - 6.99 -	0.2155 0.3455 0.5535 1.08 1.59 3.03 5.534	61.55 72.75 81.98 98.22 98.98 99.42 99.71	- 4. - 0. + 2. + 8. + 9. + 10. + 11.	.005 .345 .175 .219 .986 .595	99.015 97.921 94.982 89.04 78.67 55.74 43.06 24.09 11.45	.0 .0 .0 .0 .0	332 334 346 369 400 384 331	.0274 .0280 .0290 .0316 .0350 .0345 .0295 .0172 .0069	.0217 .0215 .0236 .0244 .0290 .0282 .0260 .0145 .0049
Gillis and Del	aunais, 193	4			8		0.0	d	
mol %	f.t.	mol %	f	.t.			0°	60°	80°
100 86.75 81.1 76.87 69.76 65.39 63.42 58.53 45.04	11.6 7.81 5.80 5.27 4.71 4.07 3.87 3.42 +1.95	28.85 24.36 17.47 13.49 12.36 9.677 6.618 2.043	-1 -1 -1	2.51 4.35 9.28 14.05 13.72 11.2 7.55 1.79	100 99.015 97.921 94.982 89.04 78.67 55.74 43.06 24.09 11.45	.0 .0 .0 .0 .0	106 107 126 160 217 1 224 188 089 0	.9883 .9881 .9884 .9904 .9906 .0007 .0051 .0036 .9962	0.9650 .9646 .9654 .9676 .9723 .9792 .9862 .9866 .9822

				-W4		
Harned and Morris	son, 1936 and		Tommila an	nd Koivisto, 19	48	
Harned and Calmon			%		d	
t	d.	92 4	J	15° 20°	25°	40° 50°
0 1.0271 5 .0245 10 .0219 15 .0193 20 .0167 25 .0141 30 .0115 35 .0090 40 .0063 45 .0038 50 .0014	45 % 70 % 1.0484 1.0619 .0450 .0570 .0419 .0522 .0386 .0474 .0353 .0426 .0319 .0387 .0282 .0332 .0246 .0285 .0210 .0239 .0175 .0194 .0139 .0148	82 % 1.0540 .0488 .0436 .0387 .0338 .0288 .0288 .0236 .0183	2.167 4.727 9.955 1 19.695 29.365 39.000 48.381 57.871 71.90 80.36 89.63 93.59 96.77 98.35	- 1.00018	. 99893 1.00111 . 00561 . 01385 . 02139 . 02778 . 03262 . 03580 . 03670 . 03532 . 03233 . 03047 . 02905 . 02856	0.99224 0.98807 99381 98949 99564 99115 999462 1.00633 1.00067 01250 00660 01748 01032 02119 01327 02321 01463 02276 01327 02053 01045 01639 00573 01420 00315 01236 00110 01157 00029 01095 0.99961
Wang, 1940						
mol %	d. 15°	30°	Pesce and	Lago, 1944		
100			mol %	đ	mol %	d
100 92.986 90.531 100 98.995 98.499 97.998	1.03890 1.03915 1.03934 1.03885 1.03886 1.03886	1.02207 1.02246 1.02273 1.02202 1.02204 1.02205 1.02207	0.00 2.78 6.35 15.99	25 0.99707 1.00758 1.01806 1.03260	18.23 34.33 55.44 100.00	1.03420 1.03672 1.03380 1.02802
97.483 96.481	1.03887 1.03887	1.02210 1.02214	Griffiths,	1952		
			%	đ	%	d
Harmes, 1943				25°		
100 89.965 84.846	1.03901 1: 1.03945 1: 1.03993 1:	02210 02280 02342	0.00 11.21 20.10 30.07 39.68 50.37 59.96	0.99706 1.00602 1.01365 1.02103 1.02700 1.03258 1.03607	66.42 69.82 80.02 90.72 95.28 99.06 100.00	1.03698 1.03700 1.03492 1.02940 1.02844 1.02816 1.02808
69.404 54.839 39.851 24.937 9.551 4.926 0.000	1.04364 1. 1.04534 1. 1.04464 1. 1.03128 1. 1.01855 1.	.02585 .02855 .03132 .03215 .02220 .01193 .995649	Kovalenko mol %		đ	
				25	•	40°
			0 20 40 60 80 100	1.0 1.0 1.0	965 343 355 314 286 265	0.9915 1.0232 1.0233 1.0176 1.0137 1.0101

Viscos	ity and s	urface te	nsion .			Kovalenko,	Tifonov an	ıd Tissen	, 1956	
Herz a	nd Lorent	z, 1929				mo1 %		25°	η 40	٥
×		20°	40°	60°	80°	0 20		894 1923 1784	65 132	7
10 40 50 60 70 90		1206 1949 2192 2217 2130 1148 ? 1255	778 1206 1339 1368 1361 1063 917	539 796 875 909 912 763 685	404 569 621 649 658 582 539	40 60 80 100		1453 1262 1181	127 108 195 99	7 7
====						Herz and L	orentz, 192	29		
Geddes	s, 1933					%	20°	ح 40°	60°	80°
20°	25°	30°	η 40°	60°	80°	10 40	57.77 39.67	53.83 37.41	49.01 35.03	45.92 32.97
1307.6 1307.9 1307.1 1307.2	1196.4 1196.6 1197.6 1196.9	1099.0 1099.2 1100.3 1100.5	941.6 941.4 941.5 941.0	714.6 714.9 714.5 714.9	562.5 562.4 562.9 562.6	50 60 70 90	38.36 35.15 33.99	36.64 33.13 32.52 30.42	33.95 31.07 30.44 28.70	32.46 29.56 28.33 25.57
1305.5	1196,2		939.1	712.1	561.8	Wolf, 194	3 and 1948			
1306.0	1195.9	1098.4	939.1	711.6	561.5	%	σ		%	σ
1320.0 1319.9	1206.7 1205.7	1107.7 1106.8	944.3 944.0 982 %	713.8 713.5	561.9 561.3	100 90 75 50	35.42 33.85 34.60 35.65	; ;	25 10 0	38.62 45.94 72.60
1399.2 1399.8	1274.5 1273.9	1162.7 1162.7	983.0 983,5	733.8 734.1	570.6 570.7			, ======	-	
16 2 1.5 16 1 9.1	1457.8 1458.1	89.0 1321.5 1321.2	1099.8 1099.7	800.7 799.6	607.9 607.5	Kovalenko,		d Tissen,	, 1956 σ	
1981.6	1760.6	78.6 1574.3	1279.0	895.6	661.1	MO1 %		2 5°		0.
1981.0 2263.7 2263.2	1760.9 1976.0 1974.8	1573.9 55.7 1738.3 1738.1	1278.7 74 % 1377.4 1376.1	924.6 924.2	663.2 662.4	0 20 40 60 80		71.97 40.37 36.81 34.85 33.86	37 35 33 31	.48 .97 .06 .15
2059.9 2059.8	1796.2 1796.2	1579.7 1579.0	06 % 1250.5 1250.6	843.3 843.0	610.0 609.9	100		33,65	31	.57
1576.8 1576.2	1380.2 1380.7	1221.3 1221.1	975.6 975.5	671.3 670.1	494.9 494.9					
1257.9 1258.5	1109.0 1108.4	985.5 985.3 0	797.3 797.6	558.4 558.7	418.9 419.1					
1004.4 1004.8	892.8 892.4	798.3 798.4	654.7 655.0	468.1 468.2	356.6 357.0					

				W		=	
Optical and e	alectrical	nronerties		Bassa and Las	ro 1044		
optical and e		properties	•	Pesce and Lag	30, 1944		
Unkovskaya, l	1911 and 19	13		mol %	6678.1 Å	n 58 7 5.6 Å	5460.8 Å
mol %	n _D	mol %	n_{D}		25	٥	
100 95.006 90.039 85.023 80.048 75.132 70.069 65.030	1.42422 1.42317 1.42227 1.42137 1.42042 1.41937 1.41817.5 1.41691.5		1.41554 1.41454 1.41370 1.41167 1.40949.5 1.40684 1.40364.5	0.00 2.78 6.35 15.99 18.23 34.33 55.44 100.00	1.34231 1.35497 1.37944 1.38101 1.39755 1.40788 1.41753 5015.7 Å	1.33255 1.34455 1.35721 1.37977 1.38336 1.40000 1.41026 1.41994 4471.5 Å	- 1.34605 1.35871 1.38129 1.38495 1.40161 1.41191 1.42168 4358.3 Å
Herz and Lo	rentz, 1929)		6.35 15.99 18.23 34.33	1.38340 1.38748 1.40387	1.39060 1.40748	1.36476 1.38786 1.39139 1.40853
%	n _D	%	ⁿ D	55.44 100	1.41417 1.42399	1.41801 1.42802	1.42019 1.42897
0 30 50	1,33318 1,36453 1,38407	7.5° 70 90 100	1.40122 1.41518 1.42225	Vierk, 1950			
		· · · · · · · · · · · · · · · · · · ·		mol %	n _D	mol %	n _D
Gillis and E	n _D	mol %	n _D	0.0 0.6 1.4 3.5 10.8 33.2	25 1.3325 1.3356 1.3396 1.3479 1.3689 1.3987	50.4 53.7 54.7 96.0 100.0	1.4087 1.4092 1.4100 1.4188 1.4201
100 96.97 94.07 90.23 80.04 66.47 61.15	1.4220 1.4200 1.4180 1.4150 1.4073 1.3952 1.3920	50.86 43.22 40.81 34.37 25.73 9.382	1.3824 1.3750 1.3748 1.3674 1.3580 1.3420	Kovalenko, Ti		n _D	40°
Lynch, 1942	n _D .	K	n _D	0 20 40 60 80 100	1,3 1,3 1,4 1,4 1,4 1,4	869 035 1 27 173	1,3309 1,3820 1,3978 1,4050 1,4095 1,4126
0.000	1.3326	5° 40.03	1 2715				
3.211 9.241 10.80 16.92 19.72	1.3355 1.3412 1.3428 1.3487 1.3512	41.25 50.68 61.74 71.51 78.91	1.3715 1.3728 1.3813 1.3912 1.3993 1.4050	Landsberg, 19	w.1.	absorption	spectrum
26.41 29.95	1.3583 1.3617	89.63 100.00	1.4127 1.4197	0 80 90 95 96.5 98 99 100	4200 2200 2000 1600 1466 1356	352 3510-3 3510-3 3520-3	00 00 10 1590 1600 1600

Wayned as	nd Marriage 1	024	200		Nackal and	Wi 1027	(£:)	
t t	nd Morrison, 1				Hackel and	wien, 1937 ε	(11g.)	ε :
0 5 10 15			70 20.3 19.8 19.2	7 1 5	0 20 40	80 60 42	20° 60 80 100	27 12 1
15 20 25 30 35 40 45 50	69. 16 67. 39 65. 68 64. 61 62. 38 60. 79 59. 94 57. 73 56. 26 54. 83 53. 43	40.70 39.57 38.48 37.41 36.37 35.37 34.39 33.43	18.7 18.2 17.6 17.2 16.7 16.2 15.8	0 9 0 2 0	Wang, 1940 mol %		ه 15°	30°
	and Short, 19				100 92.986 90.531		2.224 2.691 2.896	2.200 2.626 2.817
t	0 %	ε 10 % 2	0 %	30 %	100 98.995 98.499 97.998 97.483		2.232 2.318 2.350 2.379 2.445	2.203 2.255 2.283 2.311 2.335
0 10 20 30 40 50	84.25 80.37 76.73 73.12 69.85 66.92	75.06 65 71.43 62 67.98 59 64.70 56 61.57 53 68.60 50	.16 .68 .38 .24 .26 .43	59.34 56.24 53.30 50.52 47.88 45.38 43.01	Hasted, Hag		ton, 1951	2.398
70 80 t	63,50	55,77 48	. 20 . 77	40.76 38.63	14.2	ε 25°	% w.1. = 1.262 c 33.2 45.2	ε m,
	40 %	50 %	50 %	70 %	24.9	18.6	45.2 w.l. = 9.22 cm	15.0 11.3
0 10 20 30	46.71 44.19	37.31 28 35.25 26	. 84 3. 17 5. 60	20.37 19.25 18.20	14.2 24.9	67.2 56.5	33.2 45.2	45.3 36.0
40 50 60 70 80	39.54 37.41 35.39	29.72 22 28.08 2	3.12 3.72 2.40 1.15 9.97	17.20 16.26 15.37 14.52 13.73 12.97	25 35	$\begin{array}{c} 15.0 \\ 18.3 \end{array}$	w.l. = 1.265 45	18.3
t	80 % 90	s % 95 %	98 %	100 %	25 35 45	45.3 44.75 42.21	w.1. = 9.22 55 65	40.41 40.89
0 10 20 30	12.19 6.1 11.58 5.9 10.99 5.7 10.44 5.5	03 3.82 71 3.74 60 3.65	2.73 2.70 2.68 2.65	2.109 2.104 2.102 2.100	Cook, 1951	(fig.)		
40 50 60 70 80	9.91 5.3 9.41 5.1 8.93 4.9 8.43 4.7 8.05 4.5	01 3.41 73 3.33	2.62 2.60 2.57 2.55 2.52	2.098 2.096 2.094 2.092 2.090	mol % 100 95 90		mol # 18° 75 70 65 60 55	4.7 5.3 6.3 7.5
					85 80	4		7.5 8.6
					t	£	t	6
					15 25	3.65 3.53	t 3.6 mol# 35 50	3.43 3.35

					Water + E	Poro Idobudo (C		"
Critchfield	, Gibson and	Hall, 195	3)	Paraldehyde (C	6Π ₁₂ U ₃)	
%	20°	ε 25°	30°	35°	Lecat, 19			
	80.38	78.48	76.72	74.97	 	%	b.t.	
10 20 30	72.02 63.50 54.81	70.38 61.86 53.28 44.54	68.74 60.38 51.91	74.97 67.10 58.96 50.60 42.24		68 100	93.0 Az 124.35	
40 50 6 0 7 0	45.96 36.89 28.09 19.73	35.85 27.21 19.07	43.33 34.81 26.45 18.58	33.88 25.74 18.07	Pascal and	Dupuy, 1920		عب الله الله الله عبل ولله الله عبل الله الله الله عبد مند مند مند ا
80 90	$12.19 \\ 6.23$	$\frac{11.86}{6.07}$	11.58 5.96	11.26 5.85	8	sat.t.	<u>%</u>	sat.t.
100	3.99 2.24	3.89 2.21	3,83 2,20	3.76 2.19	5.80 6.00 7.45 7.65	75.0 68.0 42.5	13.25 96.50 97.55 98.25	8.5 85.0 63.0
Heat constar	nts .				9.10 11.20 11.90	40.0 27.0 17.0 13.5	98.70 98.95 .99.05	46.0 28.5 19.0 14.5
Stallard and	d Amis, 1952				12.30 12.45	12.0 11.5	99.20	6.5
mol %	*	specif.	Qvap mola	ar.			f.t.	
0.00 1.53	0.00 7.05	2403.0 1608.6 1629.1	1035 734			9.37 11.80 13.10	- 1,53 - 1.71 E - 1,99	
1.53 1.62 3.79	7.05 7.43 16.14	1618.8 1276.7	740 631			12.27	+ 5.0 C	6H _{1 2} O ₃
4.34 4.44 6.98 7.25 11.40	18.16 18.50 26.84 27.67 38.62	1201.8 1220.5 1018.8 1018.6 884.4	604 617 563 563	49 76 31 36		12.45 12.70 98.85 99.12 99.365	6.0 9.5 9.78 10.02 L 10.28 12.4	1 + L ₂ + C
11.64 16.67 29.27 40.64	39.18 49.45 66.93 77.00	880.8 783.1 736.3 700.1	55: 55: 67: 77:	23 59 83	\$	12°	d 20°	40°
69.37	91.72	667.5	62	36 ————	100	1.00058	0.9923	0.9673
Vierk, 1950)				L ₁ L ₂	1.00388 1.01158	0.9955 1.0084	0.9696 1.0045
mol %	Qmix	moł	*	Q mix	نے جیادی جی میراندی اماری اندیا کی اداری اور اندیا کی اداری اور اندیا کی اداری از اندیا کی اداری اور اندیا کی	رندی میں بنید خود این	رستان کی کی کی در این	نها چون اما کان دی دی دی داد کان کان کار در
5.0 9.6 13.7	- 92.48 -130.00 -139.95	56.6 61.4 67.5	1 2	+ 55.15 + 7 5. 0 9 + 95.47	Strada and	Macri, 1934		
17.5 20.9	-139.95 -136.77 -127.55	74.1 78.1 82.1	1 2	+112.34 +116.95	K	đ	K	d
38.4 41.7 45.7	- 42.87 - 22.56 - 0.25	87.1 93.1	, 8 5	+116.28 +105.53 + 73.26	0	0.9982	6	1.0043
50.6	+ 26.78			70.20	2 4	1.0012 1.0026	8 10	1.0043 1.0058 1.0076
Feodosyev, 0	sipov and Mo	rozova, 19	54			K	n _D	
mol %	Q mix	mol	%	Qmix		20	0	
0 5 10 20 40	- 80.6 -118.1 -121.4 - 16.5	60 70 80 90 100		+ 69.6 + 99.6 +112.0 + 94.8		2 4 6 8 10	1.33562 1.33705 1.33905 1.34105 1.34302	

Water + Cineole (C ₁₀ H ₁₈ O)						
Lecat, 1949]	Water + Form	aldehyde (Cl	I ₂ 0)	
<u> </u>	b.t.		_	Auerbach, 190	05		
43	97.6	5 Az	_		<u> </u>	p ₂	
100	176.3	35			7.8	3° 0.17	
			==		15.0 23.7	$\substack{\textbf{0.30}\\\textbf{0.30}}$	
Water + Estragol	$(C_9H_{10}O)$				27.8 30.9	0.34 0.40	
Lecat, 1949			-		(sie	:.) 	
Я	b.t.						!
18 100		3 Az	-	Blair and Led			
100	215.6) 		c	p	c	<u>P1</u>
Water + Valerolact	one (C ₅ H ₈ O ₂)			9.52 19.7 29.5	0.340 0.575 0.780	31.1 40.2	0.795 1.025
Kurnakov, Voskrese	enskaya, Goltz	man and al.,	1938		0 9		• -
mol %	25°	đ 50°		8.09 15.68	0.056 0.102	20.63 31.25	0.118 0.157
100 70 50 30	1.0503 1.0504 1.0502 1.0374	1.0286 1.0286 1.0285 1.0126		Ledbury and	Blair, 1927		
10 0	1.0101	0.9972 0.9890	 -	С	P2	с	P ₂
			==		0		
Kurnakov, Voskresei	nskaya, Goltzm	an and al., 19	938	0 8.5 15.7	0.000 0.053 0.101	20.5 31.5	0.119 0.153
mol %	25°	η 50°			20	٥	
100				9 19 2 9	0.375 0.59	31 40.5	0.797 1.01
100 70 50	1815 1899 2080	1255 1328 1367		29	0.785 35	0	
30 10 0	2167 1764 900	1406 1012 569		1.09 5.15 11.8 18.6	0.166 0.695 1.29 1.80	20.8 31.0 39.5	1.94 2.48 2.81
Barkalov and Hama	lov 1010				45	>	
Berkeley and Hart π	P	π Р		10.8 20.4	2.30 3.79	28.75 39.2	4.72 5.60
0.00	0°	30°					
0.00 50.7 18.70 40.90 35.35 33.2 42.30 30.2 47.43 28.69	6 30 7 81 7 113	44.5 93 38.6 33 33.26 83 31.04 114 29.71 143	2				

WATER + FORMALDEHYDE

100° 2.35 2.0 9.2 3.00 100.0 9.13 99.6 20.39 99.3 3.05 2.8 13.1 23.46 99.2 5.85 4.4 20.6 5.85 4.9 23.1 8.2 6.2 29.1 9.6 7.2 3.44	vol % 763 mm 30.16 36.22 41.87 50.00	99.1 99.1 99.1 99.1 99.0
L V 100° 2.35 2.0 9.2 9.13 99.6 3.05 2.8 13.1 23.46 99.2 5.05 4.4 20.6 5.85 4.9 23.1 8.2 6.2 29.1 9.6 7.2 34.4	30.16 36.22 41.87 50.00	99.1 99.1
5.85 4.9 23.1 8.2 6.2 29.1 9.6 7.2 34.4		
10.0 8.4 40.1 Piret and Hall, 1948 15.2 11.5 56.1 16.8 13.1 64.3		
19.6 15.6 78.4 89.2 24.7 20.3 104.3 28.4 21.3 110.2 0.00 29.3 20.1 103.2 2.57 32.2 18.5 93.7 4.46 32.7 19.2 98.4 7.98 34.4 19.6 100.3 12.62 36.4 22.2 114.6 15.5 36.1 22.4 116.3 19.8 40.9 23.2 121.1 22.65 25.35 31.1	99.3 98.95 98.85 98.65 98.45 98.35 98.35 98.35 98.35	760 mm 100.0 99.75 99.60 99.35 99.10 99.00 98.95 98.95 98.95 98.95 98.95
41.5 43.8 Farberov and Speranskaya, 1955 45.8 47.0	98.40 98.45 98.55 98.60	99.00 99.05 99.15 99.20
wt % mol % 47.2 49.3 L V L V 51.5 53.1	98.65 98.80 99.10 99.40	99.25 99.40 99.70 100.00
at b.t. (4 atm.) 0.46	b.t.	\$ (V)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	98.75 98.8 98.85 99.2 100	30 35 40 45 50
Green and Vener, 1955	11-2-12	
L V		
F 15 (00)	8.5° 21 23 25 27 30 33 35 38 40	1.052 1.058 1.064 1.069 1.075 1.078 1.081 1.085

Davis, 189	7						
%	đ	%	đ	Reicher and	Jansen, 1912		
	15	.56°	1.062	%	n _D	%	n _D
0 2 4 6 8 10 12 15 20	0.999 1.004 .009 .014 .019 .024 .029 .037 .052	24 28 30 31 32 34 36 38 39	1.063 .075 .082 .086 .091 .099 .108 .116 .120	0 1 2 3 4 5 6 7 8	1.3334 1.3345 1.3345 1.3358 1:3369 1.3382 1.3394 1.3406 1.3418 1.3430	5° 13 14 15 16 17 18 19 20 21	1.3489 1.3501 1.3513 1.3525 1.3538 1.3549 1.3560 1.3572 1.3583
Auerbach, 1	.905) 10	1.3442	22 23 24	1.3597 1.3608
%	d	%	đ	10 11 12	1.3467 1.3478	24	1.3619
2.23 4.60 10.74 13.59 18.82	1.0054 .0126 .0311 .0410 .0568	8° 23.73 27.80 34.11 37.53	1.0719 .0853 .1057 .1158	Wagner, 1920		c	n _D
						.5°	
Natta and E	Baccaredda, 19	33		0.000	1.33320		1.34947
%	đ	%	d	0.313 0.626 0.939	.33358	13.597 13.916 14.235	.34984 .35021
0 5 10 15 20 25	0.9986 1.0141 .0299 .0449 .0600 .0757	8° 30 35 40 45 50	1.0910 .1066 .1220 .1382 .1570	1.252 1.565 1.879 2.193 2.507 2.821 3.135 3.450	.33435 .33474 .33513 .33551 .33590 .33628 .33667 .33705 .33743	14.554 14.873 15.192 15.511 15.830 16.150 16.470 16.790 17.110	.35058 .35095 .35132 .35169 .35205 .35242 .35279 .35316 .35352
Thomas and	Perman, 1934			3.765 4.080 4.395	.33781 .33820 .33858	17.110 17.430 17.751 18.072	.35388 .35425 .35461
%	d	%	đ	4.710 5.026	.33896 .33934	18.393 18.714	.35497 .35533
7.95 11.5 16.4 22.1	1.020 .028 .040 .055	29.0 33.1 40.2	1.073 .078 .087	5,342 5,658 5,974 6,290 6,607 6,924 7,241	.33972 .34010 .34048 .34086 .34124 .34162 .34199	19.035 19.357 19.679 20.001 20.323 20.645	.35569 .35606 .35642 .35678 .35714 .35750 .35786
%	π	%%	π	7.558 7.875	.34237 .34275	20.968 21.291 21.614	.35822 .35858
7.95 11.5 16.4 22.1	41.6 40.6 37.9 36.1	29.0 33.1 40.2	34.0 32.6 30.3	8,192 8,509 8,826 9,143 9,460 9,778	.34313 .34350 .34388 .34426 .34463 .34500	21.937 22.260 22.584 22.908 23.232 23.556	.35894 .35930 .35966 .36002 .36038 .36074
Natta and I	Baccaredda, 19	33		10.096 10.414	.34537 .34575 .34612	23.870 24.195	.36109 .36145
K	n _D	%	n _D	10.732 11.050 11.368	.34612 .34650 .34687	24.520 24.845 25.170	:36181 .36217 .36252
0 5 10 15 20 25	1.33307 1.33881 1.34456 1.35044 1.35598 1.36178	30 35 40 45 50	1.36760 1.37352 1.37950 1.38578 1.39250	11.686 12.004 12.322 12.640 12.959 13.278	.34724 .34761 .34798 .34836 .34873 .34910	25.495 25.820 26.145 26.472 26.798	.36287 .36323 .36359 .36394 .36429

Water		<i>a</i>			Pascal, Dupuy	, Ero and G	Garnier, 192	L	
water + A	Acetaldehyde (C2H40)			b.t.			p	
Morozov,	Kagan and Gro	ssblyat, 1934				L	v		
	p ₂	p ₁	р		20.8	100	_	762	
	1	100			23.5 24.0	89.4 86	-	11	
0 4.9	- 74.5	$\begin{smallmatrix} 9.21\\10.0\end{smallmatrix}$	9.21 84.5		24.5 24.9	80.7 75.0	-	11	
8.2 9.5	113.3 128.95	$\substack{14.3\\14.46}$	1 27. 6 143.41		25.0 25.4	73.6 70	-	H 19	
10.5 27.05	139.8 268.3	15.65 18.2	155.45 286.5		25.9 26.4	66.7 63.2	-	n 11	
46.6 48.8	363.4 373.2	18.2	381.6		26.5 26.8	62.5	-	u	
100	503.4	17.04	390.24 503.4		27.2	60 57.2	-	11	
	2	20°			27.8 28.5	54.3 50.0	-	765	
0 5.4	125.2	17.53	17.53		29.0	50.0 47.0	-	762 762	
8.8	125.2 206.0	18.3 20.9	143.5 226.9		29.9 32.0 33.0	40	-	762 760	
12.9 19.0	295.2 406.8	22.2 23.9	317.4 430.7		34.5	35.3 35.0	-	765	
21.8 3 7. 0	432.62	24.17	456.7 542.3		36.0 37.0	30.07	96.6	761 750	
100	721.0	=	721.0		40.5 41.0	25.0	95.3	765 761	
					45.0 52.5	$\begin{array}{c} 20.0 \\ 15.0 \end{array}$	-	750 765	
Dohminak	ovo Norkovich	and Naimon	1059		53.5 58.0	12.47	92.38	761 750	
	aya, Markovich	and Nerman,	1930		62.0 63.0	10.3	87.9	760 761	
wt %	mol %	24 770 14	p	0.00	1 67.5	-	80.9 77.5 77.32	101	
		24.77° 1:	2.04°	0.00	75.0 77.5	3.55	77.32	π	
11.4	$\begin{smallmatrix} 5.0\\13.4\end{smallmatrix}$	189.5 436	89 219	40 90	86.5 93.0	$\frac{2.04}{1.05}$	67.92 48.07	11	
27.6 36.2 50.2	18.9 29.3	564	31 2 383	139 191.5	97.0	0.2	22.56	tt	
76.7	57.4	769	1 70	277					
81.5 86.5	64.3 72.7	791	183 1 88	282 292 315	Show, 1925				
96.0 100.0	90.6 100.0	841 761(19.8°)	524 562	315 346.5					
A					- 8	f.t.		f.t.	
wt %	mol %	p	P	2	0 4.8	$^{0}_{-2.5}$	18.6 22.5 31.0	$-11.2 \\ -14.0$	
2.6	1.05	24.77° 772.5	35	.5	8.8 13.5	-5.0 -7.8	31.0	-23.0	
4.85 8.2	2.5	766.2 773.5	64 113	.8 .1					====
20.4	9.5	774.7	312						
33.6 50.3	7.6 13.0	0°	5 ₄	4.6 0.5	Van Aubel, 18	39 3			
63.1 71.5	$\substack{18.3 \\ 50.8}$	-	129	9.1 1.0	%	t	 -	đ	
=======================================				======	0.00	17	.4 0.	9996	
					13.68 26.32	17 17	7.8 1. 7.5 1.	0028 0043	
					54.25	17	0.1	9761	
					76.27 85.81 100.00	16	.8 0.	9154 8775	
					100.00		.4 0,	8122	
									
				ļ					

		T .		
Vaubel, 1899		Kurnakov, Vo	oskresenskaya, G	ioltzman and al., 1938
% d	% d	mol %	đ	mol % d
0 0.9996 10 1.002 20 1.0055	30 1.0060 40 1.0040	100 90 70 50 40	0.8074 0.8376 0.9051 0.9671 0.9901	30 1.0145 20 1.0098 10 1.0051 0 0.9998
Pascal and Dupuy, 1920		Kurnakov, Vo	oskresenskaya, (Goltzman and al., 1938
76	d 4° 20°	mol %	η	mol % n
7.4 9.9 17.2 22.2	0038 0.9996 0060 1.0006 0093 1.0021 - 1.0043 - 1.0038	100 90 70 50 40	273 1064 2818 6146 7243	30 7964 20 7308 10 4683 0 1801
26.5 27.5 30.2 39.2	- 1.0026 0251 - 0262 - 0.9846	Van Aubel, 1	893	
42.1 43.9 1.	- 0.9791 0224 0192 -	%	t	n _D
60.1 60.4 86.7 90.2	9869 - 0.9240 8430 - 0.7892 8080 0.7865	0.00 13.6 26.3 54.2	8 18.8 2 18.8 5 18.7	1.3329 1.3451 1.3556 1.3690
	8014 - 0.7831	76.2 85.8 100.0	7 18.8 1 18.5 0 18.6	1,3647 1,3584 1,3441
Homfray, 1925		Homfray, 192	25	
% t	d	7	t	
0.00 19, 15.86 19, 44.90 19, 55.03 18, 60.18 19, 70.24 18, 70.90 18, 85.47 18, 100.00 19,	0 1.0028 4 0.9857 4 0.9725 0 0.9586 6 0.9236 4 0.9170 6 0.8544	0.00 15.86 44.95 55.03 60.18 70.24 70.90 85.47 100.00	19.0 5 19.0 19.4 3 18.4 8 19.0 4 18.6 7 18.4	1,3333 1,3475 1,3647 1,3678 1,3683 1,3655 1,3634 1,3524 1,3337
Strada and Macri, 1934		Strada and M	lacri, 1934	
% d %	đ	₹ n _D		n _D
20°			20°	, u
0 0.9982 60 10 1.0020 70 20 1.0040 80 30 1.0000 90 40 0.9850 100 50 0.9600	0.9250 .8681 .8098 .7870 .7796	0 1.333 10 .342 20 .350 30 .354 40 .363 50 .364	800 60 860 70 950 80 180 90 800 100	1.36400 .36000 .35398 .34597 .33315

Lauder, 1948	Boutaric, 1920
mol % n _D mol % n _D	% sat.t. % sat.t.
0° 1.33440 63 1.35721 11.5 1.35700 72 1.35113 32.2 1.37268 82.6 1.34626 39.2 1.36796 83.3 1.34540 45.5 1.36536 100 1.33673 55 1.35977 13.5° 45.5 1.35481 62.2 1.35123	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	21,82 33 23,84 54
Dobrinskaya, Markovich and Neiman, 1953	
% Q vap % Q vap	Boutaric and Corbert, 1927
10 10100 50 6600	% sat.t. % sat.t.
20 8950 90 6270 30 8050	95 0 58.7 87.5 91.5 32.5 56.2 88 89.0 44.4 55.5 88 87.8 50 46.9 85.5 86.8 53 39.9 77.8
Water + Butyraldehyde (C _Կ H ₈ O)	79.3 74.5 30.3 62 69.9 82 25.1 48
Lecat, 1949	64.5 84 20 0 C.S.T. = 88°
% . b.t.	
0 100 94 68 Az 100 75.7	Water + Oenanthole (C ₇ H ₁₊ O)
	Noorduyn, 1919 (fig.) # mol # f.t.
Water + Isovaleraldehyde ($C_5H_{10}O$)	100 100 -42 96,542,5
Lecat, 1949	- 90 +11.4 (1+1) - 0.019 +11.4
# b.t.	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
0 100 88 77 Az	
100 92.5	Water + o-Phthalic aldehyde ($C_8H_6O_2$)
Water + Acrolein ($C_3H_{\downarrow}0$)	Seekles, 1923
Moureu, Boutaric and Dufraisse, 1920	mo1 % f.t. mol % f.t.
t % L ₁ L ₂	100.00 53.2 0.693 45.4 63.97 46.9 0.68 35 57.05 45.6 0.662 25 54.10 45.4 0.637 15
- 8 96.02 - 0 95.33 20.64 +10 94.40 20.80 +20 93.23 21.05 +30 91.86 21.33 +40 90.00 21.84 +50 87.62 22.96 +53 86.75 23.84	54.10

		t		p	
Water + Methyl α -d-Glucoside (C ₇ H _{1 4} O ₆)		10	0% 0%	6
Berkeley and Hartley, 1926		20	1.	.2 49	.2
% Posmotic %	P osmotic	37. 51.	7 10	.5 192	.3
0°		65. 79.	4 42	.0 595	.9
18.62 29.87 35.4 25.80 47.72 38.9	2 80.78 6 95.97	93. 107.	2 132	.8 -	
31.00 63.84 43.0	8 117.19	121.	1 215		
Wise and Nicholson, 1955		Mains, 1922			
% f.t. %	f.t.	mol 9	%	mol %	
70.90 78.0 59.42	49.0	L	V	L	v
68.78 73.2 57.31 66.70 67.8 55.33	43.2 37.2		at b.		
66.08 66.2 54.48 65.25 64.2 53.42 64.71 62.7 52.41	33.9 31.8	0.38 0.77	2.57 5.83	4.40 2	0.7 1.7
64.02 60.6 52.36	27.3 26.6	1.25 1.62	8.94 10.1	5.60 25	4.9 5.1
62.40 57.3 51.59 61.48 54.4 51.20	25.5 22.5	2.08 2.66	12.7 15.7	7.40 26	5.4 5.1
61.48 54.4 51.20 60.79 51.8 49.38 59.78 49.6	17.8	2.88 3.41	16.7 18.4		8.3 8.5
		I ======			
Water + Furfural (C5H402)		Andreev and	Tsirlin, 195	4	
Pearce and Gerster, 1950			%	•	6
mol % p mol	% p	L	v	L	<u>v</u>
25 500		1.00	6,90	0 mm 30.00	31.18
98.02 14.85 88.4	2 43.20	1.65 3.00	8.50 17.80	33.50 50.00	33.19 33.65
97.57 17.48 87. 96.75 20.10 85.	8 44.50	4.10 5.00	17.80 19.50 21.70	70.00 90.00	34.00 33.87
95.71 23.50 83. 95.50 24.07 81. 95.16 23.41 79.	0 46.40 7 49.90	10.00 20.00	29.10 32.92	95.00 100.00	41.90 100.00
95.16 23.41 79.1 93.00 30.10 79.1	3 50.10 2 50.47				
93.00 30.10 79. 92.48 35.85 (sic) 78. 92.17 29.60 76. 91.69 35.90 1.	2 52.30 7 52.87				
11 70.00 37.30 11	2 52.3 0 52.4	Melnikov and	d Tsirlin, 19	256	
89.47 39.10 0.2 89.36 39.90		% (L)	at b.t.	≰ (V)	
65,56°		1	1.0 atm.		5.75 atm.
97.54 57.80 83. 96.03 72.7 78. 95.09 83.31 71.	2 159.7 8 181.4	0.5 1.0	3.700 7.000	2.610	2.265
l 93.42 102.3 2.0	8 208.6	3.0	17.100	5.050 12.960	4.260 11.040
H 90.75 121.2 1.0	5 207.7 2 200.3	10.0	23.60 31.70	17.60 26.80	15.65 24.80
88.02 136.0 0.4 85.66 148.7	5 199.5	15.0	36.45 7 a.tm. 9	28.80 Patna. 14 at	27.30 tm. 18 atm.
93, 33°		0.5		2.030 1.81	1.780
97.33 166.5 80.4 94.72 230.2	2 421.4 7 635.2	1.0 3.0	10.125	9.315 8.22	20 7.740
91.88 277.3 1.3 90.80 335.9 1.0	7 630.0	$\begin{smallmatrix} 5.0\\10.0\end{smallmatrix}$	15.15 1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	11.70
89.72 333.2 1.0 84.51 409.4 0.4	5 598.6	15.0	23.60 2 26.25 2	25.80 24.30	23.55
	- 0.000				

WATER + FURFURAL

Curtis and Hatt, 1949		Mains, 192	22		
b.t. L mol %	v	%	b.t.	%	b.t.
6.17 kg/cm ² 159.0 0.00 158.8 0.17 158.7 0.17 158.1 0.86	0.00 0.70 0.88 3.16	0.79 1.37 2.54 3.54 5.06 6.94	99.67 99.45 99.27 98.87 98.48 98.33	10.2 15.4 21.1 30.0 34.7 52.0	98.04 97.91 97.91 97.90 97.90 97.93
158.0 0.94 157.5 1.54 157.3 2.31	3,70 5,98 6,68 8,08	×	b.t.	%	b.t.
157.0 4.70 156.95 7.31 156.9 9.03 157.1 15.5 157.3 31.3 158.6 42.3 159.4 48.0 162.4 57.7 174.0 68.7	8.89 9.03 9.74 10.3 11.0 10.9 11.5 17.1	73.0 82.2 86.0 90.2 94.8 98.3	97.90 97.90 97.96 98.3 99.8 118.5	98.5 99.3 99.7 99.95 100.00	127.8 155.9 169.1 160.7 161.7
176.0 72.0 178.8 68.9 180.0 74.3	19.7 20.7 22.4	Lecat, 194	9		
189.6 78.8 201.0 82.7 204.0 83.0	27.1 35.0 40.6		%	b.t.	
239.8 100.0 7.85 kg/cm ²	0.00		65 100	97.85 161.45	
168.65 0.19 168.6 0.25 167.9 0.84 167.8 0.94 167.4 1.67	0.80 0.90 3.23 3.40 5.08	Rothmund,	1898		
167.3 1.78 167.25 2.36 167.2 166.8 5.17	5.86 6.10	%	sat.t.	K	sat.t.
166.75 6.99 166.7 10.0 166.75 11.1 166.8 11.6 167.0 18.2	6.07 8.32 8.89 9.07 9.21 9.36 9.48 9.85	7.78 12.84 14.94 31.93 40.01 51.64	32.75 80.42 87.97 118.75 121.65 122.30	61.29 81.45 87.17 91.85 93.27 95.99	122.47 105.50 87.20 58.42 45.25 13.97
167.5 27.3 167.6 29.5 168.8 40.0 169.2 43.0 173.0 53.8 174.2 54.8 183.2 69.5 186.4 71.4	10.3 10.9 11.1 13.3 14.2 16.8 18.7	Mains, 192	2		
194.4 75.4 198.0 81.1	23.7 27.8	t	% L ₁	t	% L ₂
210.0 84.6 213.4 84.6 215.0 85.1 224.0 88.4 253.8 100.0 9.83 kg/cm ²	35.9 36.6 38.7 52.4 100.0	16 17 27 27.2 27.5 44 61	8.12 8.18 8.72 8.72 8.68 9.80	8 26.6 37 44 65 70 84	96.5 94.6 93.3 92.8 90.9 90.3 88.0
178.3 0.00 178.2 0.15 178.1 0.19 177.8 0.52	0.00 0.68 0.74 1.93	66 92	11.9 12.5 17.0	96	84.5
177.7 0.58 177.6 0.70 177.5 0.88 177.2 1.46 176.8 2.22	2.04 2.45 2.84 4.14 6.22				
176.7 2.68 176.5 3.98 176.4 4.59 176.3 6.74 176.2 8.74	6.31 7.78 7.98 8.78 9.03				
176.3 10.1 176.8 18.5	9.25 9.70				

	Water + Chl	oral (C ₂ HOCl ₃)	
Evans and Aylesworth, 1926	Beckmann, 1	888		
% sat.t. % sat.t.	%C2H3O2	Cl ₃ b.t.	% C2H3 O2	Cl ₃ b.t.
94.09 27.85 50.04 120.9 91.83 53.35 48.98 120.85 88.79 73.6 47.37 120.8 83.03 95.95 33.77 117.9 72.19 115.1 27.84 113.1 65.03 119.15 22.39 106.1 56.34 120.5 20.75 102.8	0.94 2.52 4.34 5.88 10.39	100.135 100.335 100.575 100.775 101.365	14.54 23.98 31.29 39.83 46.04	101.915 103.145 104.165 105.35 106.12
50.69 120.85 15.04 85.8 50.54 120.9 9.82 53.1 50.30 120.9 9.03 39.5	Christensen	, 1900		
	8	b.t.	%	b.t.
	0.00 0.45 1.63 2.50 3.52 4.80 6.43 7.47 8.76 9.93 11.60 13.50	99.98 755mm 99.95 99.89 99.85 99.77 99.73 99.70 99.63 98.55 98.55 98.43 98.35	15.25 22.95 23.47 24.02 24.58 25.16 25.80 26.46 27.86 28.64 29.45	98.28 99.13 99.10 98.90 98.88 98.85 98.85 98.85 98.89 98.95 98.91 98.91
C.S.T. = 120.56 Timmermans and Kohnstamm, 1910 dt/dp (5 - 165 atm.) = -0.001	0.00 0.92 2.05 2.94 3.81 4.66 5.40 7.24 8.23 10.25 12.08 13.85	100.00 99.95 99.94 99.90 99.87 99.83 99.75 99.70 99.62 99.53 99.43 99.35	15.54 17.17 18.75 20.25 20.11 23.19 24.65 25.07 27.40 28.71 29.97	99.29 99.22 99.13 99.05 99.12 99.01 98.97 98. 96 98.93 98.93 98.91
	71.30 70.60 69.23 68.56 67.26 67.26 66.64 66.02 65.41 64.80 64.34 63.26 63.10 62.55 62.00 61.47 60.42 59.92 58.93 58.97 57.50 56.59 55.71 54.01 54.01 53.04	98.59 98.59 98.59 98.58 98.56 98.56 98.66 98.66 98.66 98.66 98.665 98.665 98.655 98.556 98.556 98.556 98.556 98.556 98.556 98.556	52.50 51.99 51.48 50.48 50.00 49.53 47.10 46.37 47.10 46.37 45.46 44.67 43.92 43.19 42.48 41.75 40.67 39.78 38.10 37.33 38.10 37.33 38.10 37.33 38.10 37.35 38.44 42.48 41.75	98.58 98.59 98.59 98.60 98.61 98.62 98.62 98.62 98.65 98.65 98.65 98.67 98.75 98.75 98.75 98.78 98.80 98.82 98.82 98.82 98.82 98.82 98.82 98.82 98.83 98.83 98.83 98.84 98.85 98.85

Christensen,	1900			Roth, 1903			
76	b.t.	J.	b. t.	% (1+1)	N (1+	1) f.	
100.00 99.72 99.54 99.35 99.16 98.98 98.98	96.63 96.07 95.83 95.70 95.50 95.43 95.50	98.80 98.61 98.43 98.07 97.72 97.36 97.00	95.43 95.37 95.10 94.95 94.94 94.92 94.85	3.353 6.413 9.344 13.091 15.809 16.220	0.4143 0.6233 0.9115 1.1354 1.1703	-0.76 2 -1.15 5 -1.66 4 -2.1 7 -2.1	685 508 931 169 860
89.13 88.99 88.48 87.79 87.54	96.99 97.04 97.13 97.23 97.23	80.13 80.13 79.55 78.93 78.26	98.13 98.18 98.23 98.25 98.27	Jones, Jones a		904 M (1+1)	f.t.
87.97 86.60 86.90 85.08 84.50 83.80 83.02 82.39 81.70 80.86	97.34 97.43 97.53 97.67 97.73 97.86 97.88 97.88 97.89	77.65 77.04 76.44 75.97 74.73 72.50 71.46 70.43 73.60	98.27 98.26 98.27 98.22 98.22 98.29 98.31 98.33 98.27	0.30 - 0.60 - 0.90 -	0.260 0.556 1.241 1.825 2.505 3.274	1.8 2.1 2.4 2.7 3.0	-4.176 -5.200 -6.170 -7.200 -8.280
	1000			Speyers, 1902			
van Rossem,				mol % (1+1)	f.t. m	ol % (1+1)	f.t.
mol %	b.t.	mol %	b.t.	20.66 30.23	$\begin{smallmatrix}0.0\\11.3\end{smallmatrix}$	45.86 59.41	23.7 38.1
100 90 85 77 70 68 62 50	97 95.5 95.9 94.9 95.9 95.2 96.1	39.6 30 20.4 15 12.25 10 5	96.9 97.57 97.6 97.7 97.9 97.9 98.2	van Rossem, 19			m.t.
50	96.1	ŏ	99.3	0.0	0.0 - 5.8		0.0
L	mol %	b.t.		5.0 5.7 6.6 7.4	- 6.5 - 7.6		- 4.4 E - 3.3 - 2.6 - 1.8
90 50 30 12,25	87.0 53.4 33.9 13.35	95.5 96.1 97.57 97.9		8.3 9.1 9.9 11.0 12.3 12.5	- 9.8 -11.0 -11.7 -13.2 -10.8		- 1.8 - 1.3 - 1.3
	%	sat.t.		13.8 15.3 15.5	- 6.7 -		- 1.4 - 1.3 L ₁ +L ₂ - 1.5
	40 50 60	179.8 174.6 172.5		16.1 23.9 32.5 40.4 46.7 50.0	- 1.1 +17.2 +33.8 +44.7 +47.4		- - -
Abegg, 1894				56.1 62.0 66.7 71.4 75.0	+46.4 +43.4 +47.0 +48.0		- - -
N (1+1)	f.t.	N (1+1)	f.t.	82.0 85.1	+43.0		-
0.569 0.854 1.139	-1.145 -1.775 -2.44	1.437 1.708 2.277	- 3.18 - 3.89 - 5.665	90.0 94.1 97.1 100.0	+37.2 +32.3 +21.8 + 4.0 -57.5		- - -

Turbaba, 1890 and 1893	Jones and Jones and Getman, 1904
mol % a.10 ⁷ b.10 ⁹	M (1+1) d M (1+1) d
3.84 2145 4410 1.96 706 5393 0.99 62 5764 v _t = 1 + at + bt ²	0.15 1.009800 1.8 1.127992 0.30 .020008 2.1 .149968 0.60 .043140 2.4 .166328 0.90 .061832 2.7 .172920 1.2 .084788 3.0 .211584
Kanonnikoff, 1885	Vivinglay and Pframov 1012
% C ₂ H ₃ O ₂ Cl ₃ t d	Kurnakov and Efremov, 1913
33.22 20.9 1.17038 22.64 19.8 1.11428 11.82 20.9 1.05552 9.08 21.3 1.04018 3.92 21.7 1.01522	50° 60° 70° 85° 90° 0.00 0.98807 0.9832 0.97781 0.9866 0.9653 14.30 - 1.0546 - 1.0385 - 30.10 1.1595 .1479 1.1385 .1283 1.1147 47.62 .2763 .2680 .2577 .2435 .2372
Turbaba, 1890 and 1893	59.08 .3712 .3595 .3478 .3307 .3249 67.16 .4374 .4272 .4138 .3946 .3864 73.17 .4955 .4824 .4684 .4456 .4375
≰ (1+1) d 0° 15° 30°	77.82 .5383 .5227 .5054 .4681 .4681 81.50 .5730 .5568 .5375 .5083 .4944 84.50 .5959 .5784 .5547 .5230 .5073
8.02 1.03763 1.03620 1.0321 20.06 .10091 .09770 .0920 29.04 .15356 .14832 .1410 40.02 .22367 .21550 .2060 49.01 .28560 .27533 .264' 61.71 .38024 .36738 .3541 68.90 .43803 .42408 .4099 78.4450537 .4890 90.609573	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Rudolphi, 1901 # (1+1) d	Mathews and Cooke, 1914
20° 44°	t d
0.0 0.99820 0.99079 0.2 .99940 .99207 0.5 1.00125 .99383 2 .00651 .99903 5 .01976 1.01180 10 .04404 .03523 20 .09560 .08465 33.3 .17111 .15665 50 .27131 .25232 66.7 .39978 .37634 80 .51338 .48564	88 % 50 1.61647 60 .59294 70 .56648 85 .52989 90 .51331
1006261	Springer and Roth, 1930
Speyers, 1902 t d sat. sol. 0.0 1.433 15.3 1.506	0° 1.00013 20 .1203 40 .2568 60 .423 100 .557
31.0 1.572 46.6 1.606	

Kurnak	ov and Efren	mov, 1913				Sprin	ger and	Roth, 193	0		
%			ŋ				%	η (water=	:1) %	η (w	ater=1)
	50°	60°	70°	85°	90°				0°		
0.00	548	468 593	406	335 419	316		0 20	1.0000 2.227 5.378	60 100	18 1	3.54 .513
14.30 30.10	1031	838	685	549 839	474 738	 	40	3.376			
47.62 59.08	1731 2671	1391 2089	1077 1621	1178	1025						
67.16 73.17	4156 5987	308 7 4340	2278 2996 3752	1614 2030	1362 1694	Teite	lbaum, G	ortalova	and Sidor	ova, 1951	<u> </u>
77.82 81.50	8751 11361	5756 7210	4527	2391 2700	1963 2173	mol %			σ		
84.50 85.82	143 2 6 155 73 163 7 0	8539 9013 9135	5066 5149	2846 2896	2252 2231		0°	5°	10° 15	° 20°	25°
87.00 87.68	163 7 0 17061	9054	513 7 5051	2837 2741	2140 2101	0.0	75.70 69.50	74.96 7 68.46 6	4.27 73. 7.53 66. 1.99 61.	51 72.74 76 66.20	
88.10 88.72	17383 17261	8981	5013 4853	2653 2553	2057	1.0	69.50 63.88 57.98	62.69 6 56.72 5	1.99 61.	00 60,30	59.32
89.10	16718 14 07 3	8783 8647 7548	4773 4061	2476 2165	1957	5.5 15.5	48.30	47.81 4	5.95 55. 7.24 46.	82 46.47	45.91
90.91 92.47	1139 2	6021	3395	1875 1308	-	N 218	44.65 43.85	44.37 4 43.59 4	3.73 43. 2.89 42.	45 43.10 75 42.05	41.63
95.02 97.03	5 695 2681	3373 1845	2154 1353	902	-	90.0	32.29	31.59	1.17 30.	54 29.84	30.16 29.41
98.66 1 0 0.00	1447 0869	1150 0 77 9	9 7 0 6 77	653 55 7	523		30°		40°	45°	50°
		====				0.0	71.2 64.5	1 70.37 8 63.74 8 57.56	69.52 63.11	68,76 62.06	67.92 61.28
			_			11 11 11 11 11 11 11 11	58.4 52.9	8 57.56 3 52.23	51,67	56.16	55.53 50.61
Kurnal	kov and Efr					2.0 5.5 15.5	58.4 52.9 45.5 42.1	6 44.93 9 41.84	44.36 41.35	51.32 43.94 41.00	43.52 40.44
mol %	%		τ (η).10			21.8 30.3	41.1	4 40.64	40.15	39.80	39.03 37.91
		50-60	60.70	70-85		42.5 51.0	-	-	-	-	36.86 35.31
0.0	0.00	8.0	$\substack{6.2\\15.3}$	4.7 9.0		62.5 69.5	-	-	_	-	32.92 31.42
$\substack{5.0\\19.0}$	30.10 47.62	19.0 34.0	31.4	16.0		72.6 77.8	-	-	-	29.74	30.86 29.10
15.0 20.0	59.08 67.16	$\begin{array}{c} 58.0 \\ 107.0 \end{array}$	46.8 80.9	29.6 44.3		90.0 100.0	29.5 28.5	3 29.03 0 28.01		28.05 26.82	27.42 26.18
25.0 30.0	73.17 77.82	164.7 299.5 415.0	134.4 200.4	64.4 87. 0		100.0	55°	-	65°	70°	75°
35.0 40.0	81.50 84.50	578.0	268.0 347.0	121.8 148.6		0.0	67.0	5 66.18	50 ⁻ 00	64.42 58.50	5m < 0
42.5 45.0	84.50 85.82 87.00	656.0 728.5	386.0	150.0 157.0		0.5 1.0	60.6 54.9	7 54.54	58.90 53.98	53,63	57.63 52.93
47.5 50.0	88.10 89.10	840.2 807.0	396.0	153.0 153.0		2.0 5.5	50.1 43.0	2 42 46	42 18	48.65 41.69	47.61 41.06
60.0	92.47	537.0	387.0 262.6 122.0 49.2	101.0		2.0 5.5 15.5 21.8 30.3	40.0 38.6 37.1 36.1	2 42.46 1 39.59 8 38.33	39.03 37.98	38.61 37.49	38.12 36.92
70.0 80.0	95.02 97.03	232.0 83.6	49.2	56.4 30.0		30.3 42.5	37.1 36.1	4 36.64 5 35.31	36.15 34.75	37.49 35.38 33.70	34.75 32.99
$100.0 \\ 100.0$	98.66 100.00	29.7 9.6	18.0 9.6	21.0 8.0		51.0 62.5	34.4 32.5 30.9	7 33.62 7 31.66	32.85 30.82	32.01 30.04	31.52 29.13
						69.5 72.6	30.9 30.0	3 30.30 9 29.8 1	29.60 29.17	28.82 28.68	28, 19
Mathew	s and Cooke	. 1914				77.8	28.3	3 28.12	27.63	27.00	27.84 26.71
						90.0 100.0	27.0 25.4	0 26.36 8 24.99	24.43	27.00 25.52 23.80	24.74 23.38
t	η		t		η						
50	174	88 % nn	85	2	650	Kanonn	ikoff,	1885			
60	89 50	85	90	2	057	% (1+	1) 1	t		n	
70	30								Нα	<u>D</u>	Нβ
						33.2	2 20	0.9	1,37471	1.376806	1.381657
						22.6 11.8	4 19 2 20	0.8 0.9 1.3	. 36087 . 34588	.362812 .347937	.367719 .352312
						9.0 3.9	8 2] 2 2]	l.3 l.7	.341781 .335551	. 343625 . 337454	. 34 8000 . 34 1654

Rudolphi, 1901				Water +	Bromal	(C ₂ HOBr ₃)	
% (1+1)		n		Efremov	, 1918			
	H _α	D	H _β	% (1+)	1)	b.t.	% (1+1)	b.t.
0.0 0.2 0.5 5 10 20 33.3 50 66.7 80	20° 1.33151 1 .33194 .33242 .33378 .33720 .34323 .35635 .37548 .40075 .43310 .46256	1.33336 .33371 .33424 .33566 .33906 .34511 .35831 .37755 .40300 .43551 .46511	1.33747 .33793 .33838 .33980 .34323 .34941 .36280 .38230 .40815 .44122 .47132	52.05 63.84 68.18 80.89 85.43 87.76 90.24 92.01 92.60 93.98		110.2 108.7 108.0 107.4 107.2 107.0 106.3 106.0 106.8 107.4	94.52 95.08 95.90 96.67 97.33 97.91 98.54 98.88 99.29	106.9 105.6 103.5 99.3 94.2 85.55 77.4 69.5 57.0
	44°			% (1+1	.)	f.t.	% (1+1)	f.t.
0.0 0.2 0.5 2 5 10 20 33.3 50 66.7	1.32875 1 .32903 .32949 .33089 .33405 .33998 .35258 .37090 .39468 .42647 .45493	.33062 .33081 .33127 .33272 .33588 .34182 .35447 .37292 .39686 .42895 .45754	1.33460 .33491 .33538 .33681 .33999 .34606 .35891 .37764 .40192 .43444 .46360	0.00 52.05 63.84 68.18 80.85.43 87.76 90.24 92.01		0.0 25.7 32.8 35.4 43.2 45.4 46.7 48.0 48.9	93.98 93.52 95.08 95.90 96.67 97.33 97.91 98.54 98.88	49.7 49.0 48.4 47.1 44.7 43.3 40.3 33.8 27.3
100	.49089	.49328	.50028	mol	%	%	f.t.	Е
3.0 5.0 7.0 10.0 13.5 15.0 20.0 25.0 30.0 47.5 50.0 52.5 60.0 65.0 75.0	50° 37.200 38.880 40.600 35.140 32.200 30.480 28.220 16.900 11.280 4.835 1.788 1.332 1.105 0.365 0.365 0.127 0.039 0.0083	and Teite 60° 40.420 41.570 44.150 38.350 35.140 30.220 19.700 13.340 6.124 2.464 1.866 1.520 1.248 0.500 0.172	85° 44.422 46.300 49.740 43.340 39.420 35.860 32.450 23.700 15.500 6.888 3.064 2.300 2.025 1.764 0.700 0.00085	0. 0. 0. 0. 0. 1. 1. 2. 3. 5. 9. 15. 25. 38. 44. 50. 52. 55. 60. 70. 75. 80. 85.	12 17 146 73 90 335 534 885 883 840 662 444 05 00 00 00 00 00	0.00 1.58 2.98 6.69 112.44 17.71 19.25 27.11 38.44 47.02 61.84 74.29 84.01 90.56 92.52 93.98 94.52 95.08 97.33 97.91 98.88		-2.6 -2.6 -2.6 -3.3 -3.4 -3.3 -4.3 -4.3 -4.3
		=		mol %	f.t.	sat.t.	mol %	f.t. sat.t.
Barbier and Rot c (C ₂ H ₅ O ₂ Cl ₅) 10 20 30 40 50 60	t 11.3 11.7 11.1 11.3 11.0 11.5		0.359 0.372 0.388 0.401 0.415 0.429	0.00 6.51 10.16 12.08 21.35 27.32 31.06 37.22 41.41 44.51	0.0 25.7 32.8 35.4 43.2 45.4 46.7 48.0 48.9 49.4	110.2 108.7 108.0 107.4 107.2 107.0 106.3 106.0 106.8	50.0 52.5 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0	49.7 107.4 49.0 106.9 48.4 105.6 47.1 103.5 44.7 99.3 43.3 94.2 40.3 85.5 33.8 77.4 27.3 69.5 - 57.0

WATER + BROMAL

Timmermans and Kohnstamm, 1910	
dt/dp (5-155 atm.) = +0.027	Efremov, 1913 and 1918
	то1 % т 40° 50° 60°
Efremov, 1913 and 1918	0 658.8 553.7 475.2 5 1669 1252 1022 10 3070 2211 1699 15 5413 3728 2807 20 8894 5870 4138
40° 50° 60° 0.0 0.99224 0.98807 0.98324 5.0 1.4760 1.4664 1.4575 10.0 1.7247 1.7145 1.7023 15.0 1.9380 1.9142 1.8966 20.0 2.1062 2.0894 2.0705 25.0 .2407 .2126 1889 30.0 .3400 .3113 .2877 35.0 .4176 .3865 .3587 40.0 .4850 .4501 .4167 42.5 .5075 .4737 .4397 45.0 .5263 .4923 .4549 47.5 .5490 .5143 .4760 50.0 .5662 .5298 .4923 52.5 .5848 .5498 .5115 55.0 .6005 .5635 .5249 57.5 .6130 .5780 .5420 60.0 .6249 .5896 .5546	25 13454 8602 5677 30 19990 11479 7203 35 27145 14607 8582 40 34169 17128 9740 42.5 37600 18251 10322 45 40 444 19432 10723 47.5 43756 20188 10996 50 46140 20691 10896 50 46140 20691 10896 552.5 43012 20152 10809 555 39613 18984 10245 57.5 36312 17763 9743 60 33469 16428 9122 65 26613 13522 7863 70 21050 11165 6644 75 17011 9210 5693 80 13072 7535 4833 90 6810 4638 3294 95 5021 3722 2871 100 3725 3026 2551
65.0 .6477 .6112 .5768 70.0 .6636 .6284 .5922 75.0 .6647 .6339 .6003 80.0 .6640 .6309 .5985 90.0 .6511 .6190 .5869	mol % n 70° 85° 100°
95.0 .6375 .6101 .5812 100.0 .6269 .6022 .5776 8 d 70° 85° 100°	0 414.4 345.0 294.5 5 845.1 659 522 10 1354 996 795 15 2048 1447 1089 20 2988 1947 1386
0.0° 0.97781 0.96865 0.95838 5.0 1.4485 1.4315 1.4145 10.0 1.6902 1.6676 1.6450 15.0 1.8802 1.8569 1.8337 20.0 2.0517 2.0225 1.9933 25.0 1.675 1.300 2.0926 30.0 2.641 2166 1691 35.0 3280 2881 2295 40.0 3832 3289 2747 42.5 4037 3482 2926 45.0 4175 3647 3072 47.5 4385 3792 3223 50.0 4516 3927 3371 52.5 4717 4148 3587 55.0 4867 4275 3737 57.5 5037 4403 3853 60.0 5185 4515 3964 65.0 5570 4734 4175	25 3887 2354 1638 30 4747 2725 1839 35 5323 2971 1972 40 5885 3160 2045 42.5 6141 3243 2076 45 6273 3277 2063 47.5 6389 3232 2032 50 6340 3166 2005 52.5 6183 3120 1998 55 5963 3114 1944 57.5 5692 2984 1901 60 5410 2909 1841 65 4812 2681 1723 70 4247 2461 1632 75 3813 2261 1522 80 328 2153 1479 90 2483 1782 1351 95 2232 1673 1282 100 2081 1607 1264
70.0 .5509 .4890 .4348 75.0 .5625 .5083 .4489 80.0 .5627 .5092 .4603 90.0 .5537 .5167 .4804 95.0 .5532 .5175 .4817 100.0 .5544 .5188 .4832	

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WATER + ACETONE

		· · · · · · · · · · · · · · · · · · ·			Water				
Efrem	ov, 1918				Water + Ace				
mol %	wt %	40°	η 50°	60◆	Heterogeneous	equilibri	a 		
0	0		552	476	a) Vapour p				
5 10	46 63 73.5	658 1670 3070 5405	1250 2210 3730	1020 1700 2810	Taylor, 1900				
15 20 25	79 84	8889 13440	5880 8620	4130 5682	%	60°	55°	50°	45°
20 25 45 50 55 60 70 75 80 90 100	92.5 94 95 96 97.5 98 98.5 99.5	40820 46080 39220 33440 21050 17010 13070 6826 3730	19420 20620 18980 16470 11150 9220 7547 4630 3030	10720 10890 10260 9133 6646 5698 4831 3295 2500	0 10 20 30 40 50 60 70	149 339 485 577 640 682 714 740 774	117.5 275 399 478 534 572 598 621	92 221 324 393 442 472 499 517.5	71 177 262 319 364 391 414 428 447 469 505
mol %	wt %	70°	η 85°	100°	80 90 100	774 808 860	645 680 72 1	536 566.5 607	447 469 505
	0	415	345	294	- %	40°	35°	30°	25
0 5 10 15 20 25 45 50 55 60 70 75 80 90	0 46 63 73.5 79 84 92.5 94 95 97.5 98 98.5 99.5	846.0 1360 2050 2985 3891 6269 6349 5970 5405 4246 3817 3333 2481 2083	659.2 952 1450 1950 2353 3277 3165 3115 2907 2457 2262 2151 1786 1605	525.0 795.5 1090 1385 1639 2062 2000 1942 1842 1631 1522 1479 1351	0 10 20 30 40 50 60 70 80 90 100	55 139 209 258 298.5 319 340 352 368 387.5 416	42 107 165 206 239 260 277 290 301 318 343	31.5 82 130 164.5 191.5 211 224 235 245 258 281	23 65 104 130 151 161 180 191 209 229
					Schreinemake	ers, 1902			
					t	p	t	r	
					37.3 40.2 43.1 48.3	114 132 151 193	.04 % 63.1 65.7 68.1 71.8	. 44	8 7.5

40 50 60 70 80 90	640 682 714 740 774 808 860	534 572 598 621 645 680 721	442 472 499 517.5 536 566.5	364 391 414 428 447 469 505						
%	40°	р 35°	30°	25°						
0 10 20 30 40 50 60 70 80 90	55 139 209 258 298.5 319 340 352 368 387.5 416	42 107 165 206 239 260 277 290 301 318 343	31.5 82 130 164.5 191.5 211 224 235 245 258 281	23.5 65 104 130 151 168 180 188 198 209 229						
Schreinemakers, 1902										
t	Þ	t	р							
	8,	04 %								
37.3 40.2 43.1 48.3 50.5 53.1 57.6 60.4	114 132 151 193 214.5 240.5 292 329	63.1 65.7 68.1 71.8 75.5 78.8 82.4	366 408 442 521 600 677 766	3 7.5 1) 7						
15.6 \$										
35.7 40.0 45.2 49.6 54.1 57.85	155 189 240 290.5 351 410	62.0 65.7 68.9 71.45 74.3	48: 554 626 690 761	4 5.5).5						
82.94 %										
28.9 34.5 40.2 45.3 48.6	236 298.5 376 457 518	51.2 54.2 56.6 59.7	570 638 693 770	5						
										

Schreinemakers, 1902	144.3 32.70 95.26 13.10 86.18 150.6 35.6 95.81 14.7 87.68
% p % p	159.8 41.27 95.88 17.91 87.82 176.1 53.76 96.12 26.54 88.56
0 92 50° 50 447 8.04 209 60 498 10 221 70 516 15.6 296 80 536 20 324 82.94 545 30 395 90 564	184.4 63.45 96.51 35.38 89.54 199.1 81.68 97.23 58.08 91.58 213.5 92.17 98.13 78.52 94.21 229.6 100 100 100 100
40 447 100 605 0 126 56.5° 50 505	
8.04 278 60 633 10 295 70 654	Wilson and Miles, 1934
15.6 387 80 682 20 422 82.94 691 30 510 90 716 40 570 100 760	# p p 10° 20° 30° 40° 50°
	99.48 114.97 183.25 282.17 421.38 611.13 96.09 109.71 175.74 272.73 407.71 594.56 92.48 106.27 170.08 263.48 395.76 578.23 88.02 103.18 165.00 255.15 382.86 560.68 83.79 100.80 161.09 249.17 374.47 547.62 80.29 99.18 158.34 245.28 368.38 538.95
8.04 589 20 870 10 618	0.00 9.209 17.535 31.824 55.324 92.51
Makovietski, 1908	L V p ₂ p ₁ p
mol % p p ₂ p ₁	28.09 94.89 20° 96.8 5.21 102.0 54.92 96.96 135.9 4.26 140.1
100 100 284.5 284.5 0.0 85 94 270.5 254.2 16.2 70 92 256.0 235.6 20.4 50 91 240.2 218.6 21.6 30 89.8 220.6 198.1 22.5	58.36 97.17 139.4 4.06 143.5 80.75 97.37 154.8 4.18 159.0 87.43 37.87 161.0 3.50 164.5 43.18 - - 170.8
20 88.3 202.0 178.3 23.6 15 86.8 184.4 160.0 24.4 10 84.1 157.7 132.6 25.1 5 76.2 109.2 83.2 26.0	Carveth, 1899
0 0.0 31.5 0.0 31.5	p b.t. V
Beare, Mc Vicar and Ferguson, 1930	745 62.45 57.4
p p 1 p 2	745 63.6 57.9 733 65.5 57.4 741 65.75 58.0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	733 67.0 57.75 740 68.3 58.6 733 69.0 58.4 741 70.85 59.0 740 71.9 59.15 734 73.0 59.2 738 73.8 59.25
126.6 20.1 106.5 144.3 19.9 124.4 150.6 18.6 132.0 159.8 19.8 140.6 176.1 20.2 155.9 184.4 19.3 165.1 199.1 16.7 182.4	738 75.8 59.48 737 77.15 59.7 737 78.9 59.95 736 80.5 59.8 736 82.1 60.2 735 82.5 60.35
199.1 16.7 182.4 213.5 12.4 201.1 229.6 0 229.6	735 82.60 60.28 735 84.15 60.52 735 85.0 60.6
p % mol % L V L V	735 88.0 61.43 732 90.0 61.90 734 90.4 62.0
23.7 0.00 0.00 ^{25°} 0.00 0.00 50.1 5.98 77.96 1.936 52.34 61.8 8.7 84.10 2.89 62.12 81.3 13.15 89.08 4.495 71.68 91.9 15.93 91.05 5.556 75.91 126.1 24.59 94.28 9.39 83.51	728 91.4 63.60 734 92.0 64.55 735 94.1 65.05 728 94.0 65.90 735 94.5 66.90 735 95.3 68.3
126.6 25.3 94.48 9.51 84.16	

Bennett, 1929	Othmer and Benenati, 1945
t % V L	mol % b.t. L V
726.2 mm 54.9 100 100 57.4 95.0 75.5 58.3 94.0 68.0 59.0 - 58.0 59.4 92.0 48.5 63.5 90.0 23.5 70.6 82.0 12.5 81.2 70.0 5.5 91.4 50.5 2.0 97.8 9.5 1.0 98.5 3.5 0.5 98.8 0.0 0.0	760 mm 0
York Jr. and Holmes, 1942	500 mm 0 0 88.7 2.8 50.7 71.4
b.t. % mol % L V L V 100.0 1.0 13.1 0.3 4.4 103.2(?) 3.3 35.8 1.1 14.7 100.0 3.8 45.3 1.1 20.4 84.7 7.7 70.2 2.5 42.2 75.0 15.6 85.1 5.4 61.5 75.1 22.3 87.1 8.2 67.8 68.3 27.2 89.8 10.4 73.0 64.6 37.3 92.4 15.6 79.1 64.0 43.7 92.6 19.4 79.5	6.1 73.3 62.3 7.5 72.6 59.6 11.0 77.1 56.8 14.9 78.7 55.0 15.7 81.4 52.7 24.6 83.5 51.3 39.2 85.7 49.4 48.6 86.5 48.6 64.0 87.4 47.9 76.5 89.3 46.5 88.2 93.3 45.7 94.8 96:5 45.1
64.0 43.7 92.6 19.4 79.5 63.8 61.4 93.8 33.0 82.5 62.4 72.1 94.1 44.5 83.2 63.3 84.2 95.1 62.2 85.5 60.4 92.6 96.6 79.5 89.6 60.0 98.1 98.7 94.1 95.9 Brunjes and Bogart, 1943	350 mm 0 0 - 2.1 47.1 66.6 6.5 71.6 53.0 11.2 76.5 48.5 10.8 78.4 47.4 13.6 80.1 45.8 13.0 80.8 46.2 25.4 84.1 41.9
b.t. mol % L V	25.4 84.1 41.9 37.9 86.3 40.1 51.2 87.0 39.4 65.1 88.0 37.9 78.8 90.6 37.1 91.5 94.7 36.2
56.5 98.40 98.44 60.3 44.39 84.21 65.3 11.64 77.77 72.1 6.38 68.09 85.2 2.21 44.88 92.0 1.15 27.91	200 mm 0 0 66.4 3.4 60.1 48.1 5.5 71.5 41.5 15.4 79.2 33.2 17.7 83.9 30.7
Othmer, Friedland and Schiebel, 1945 b.t. mol % L V	31.1 86.2 27.6 46.8 87.6 25.9 61.2 88.5 24.8 78.0 90.9 23.8 90.3 94.7 22.8 96.8 98.2 22.3 100 100 21.8
74.0 5.0 62.0 68.9 8.2 72.0 65.8 12.5 77.1 62.9 22.0 80.0 62.7 44.5 83.1 58.3 66.0 86.6 57.8 76.0 88.8 57.3 86.5 93.0 56.7 93.0 96.0	

Othmer and Morley, 1946	Reinders and de Minjer, 1947
t mol % L V	b.t. % L V
1 atm. 93.2 2.2 48.1 85.1 7.3 73.8 71.7 19.0 87.9 63.0 40.8 93.0 660.9 61.4 94.3 59.8 73.4 94.7 59.8 76.5 94.8 59.0 86.7 95.2 58.2 93.2 96.7 57.1 97.4 98.2 1.68 atm. 110.0 1.6 41.1 102.3 4.1 63.0 81.7 23.7 89.4 75.6 53.8 93.5 74.5 57.1 93.6 72.7 83.3 95.0 72.3 91.8 96.3 72.2 96.9 97.9 72.2 99.1 99.3 3.4 atm. 128.2 3.1 49.2 119.0 6.8 71.9 114.1 10.5 79.4 102.3 23.3 88.7 99.6 35.0 90.2 98.2 51.5 91.7 97.9 60.7 91.8 96.8 78.7 92.6 96.1 96.5 97.1 97.9 98.1 98.3	100
136.8 11.2 79.2 132.0 17.6 82.8 127.3 40.4 86.4 126.7 51.9 87.6 125.5 77.0 89.7 125.6 80.8 90.1 124.8 85.8 90.4 124.3 97.5 97.2 124.8 98.7 98.4	Boiling and freezing point . Haywood, 1899
13.6 atm. 177.2 7.3 60.0	% b.t. % b.t.
164.0 22.6 76.8 160.0 41.7 81.6 158.3 61.8 84.6 157.3 68.1 85.4 156.3 84.8 88.6 156.0 90.3 90.9 157.8 97.0 96.5 157.5 98.9 98.6	773 mm 100.0 56.9 45.2 64.5 88 2 59.1 40.5 65.3 76.4 60.7 33.4 67.0 68.5 61.6 24.3 70.7 60.0 62.4 18.4 74.3 54.1 63.1 11.1 81.1 46.4 64.2 0.0 99.8

				Schreinemake	rs, 1902			
Carveth, I				%	b.t.	%	b.t.	
%	b.t.	%	b.t.		380	mm		
100.00 95.29 89.19 84.65 77.79 72.07 65.86 54.71 35.90	740 m 55.90 56.97 58.08 59.02 59.47 60.18 60.72 61.78 63.17 65.86	23.61 18.90 17.21 16.49 12.46 9.58 4.56 1.9 0.0	69.07 71.90 73.30 73.58 77.16 80.72 88.72 94.63 99.25	0 8.04 10 15.6 20 30 40 0 8.04	81.7 64 62.6 56 54 49 46 760 100 82.1 80.6	50 60 70 80 82. 94 90 100 mm 50 60 70	44.2 42.7 41.9 40.8 40.5 39.6 37.4 63.2 61.8 60.7	
Bakowski,	1931			15.6 20 30 40	74.2 71.6 67.4 64.6	80 82.94 90 100	59.5 59.2 58.1 56.5	
%	b.t.	%	b.t.	Taylor, 19	00			
99.26 98.73 97.98	56.217 56.311	98.78 97.62	56.209 56.52	p	b,t.	p	b.t.	
11 97.47	56.464 56.572	96.57 95.53	56.73 56. 97		0	%		
96.94 96.14 95.47 94.56 93.75 92.58 91.73 90.88 89.73 88.43 87.12 85.95 84.33	56. 689 56. 862 57. 007 57. 204 57. 399 57. 609 57. 778 57. 943 58. 093 58. 376 58. 336 58. 765 58. 765	93.66 91.52 89.43 86.59 83.19 82.01 79.36	57.36 57.82 58.21 58.69 59.09 59.31 59.66	19.7 20.5 23.0 23.5 25.5 27.5 34.5 38.5 40.5 42.5 44	20.8 22.1 23.8 25.4 27.1 28.1 31.7 33.2 34.2 35.4 35.4 37.2 37.2	146.5 149.5 158.5 161.0 164.5 195.7 200.5 203.5 238 242.5 287 289 355 357	59.9 60.3 61.3 61.9 62.2 66.0 66.55 67.1 70.4 71.9 75.1 80.0	
Ernst, Litk	enhous and Sp	anyer Jr., 1	932 b.t.	70 74.5 85 88 92.5 98 103 105	44.7 46.0 48.6 49.4 50.2 51.5 52.4 52.8	365.5 438.5 440.5 517.5 540.5 631.5 327.05 354.87	80.8 85.4 85.5 89.85 90.75 94.85 78.0 80.0	
	760			107 116	53.2 54.9	384.64 433.19	82.0	
100 73.6 55.4 42.0 31.8	56.24 58.01 59.68 60.79 61.60	17.1 11.8 7.0 3.3	64.42 67.24 70.09 78.19 100.00	117.5 124.5 128.5 135.5 141.5	55.0 56.5 57.1 58.2 59.1	486.76 486.76 525.47 566.71 633.66	85.0 88.0 90.0 92.0 95.0	
Griswold a	nd Buford, 19	49		128.5 143 145 146 174	38.2 40.7 40.9 41.1	342.5 344.5 396.5	60.3 60.4 63.55 66.6 70.0	
mol %	b.t.	mol %	b.t.	173.5	44.6	507.5	70.0 70.2 72.0	
8.2 11.9 19.7 30.8	72.6 68.2 64.5 62.6	42.7 63.5 71.5	61.1 59.2 58.6	174 173.5 198.5 200.5 226.5 226.5 251 252 276 278	44.6 47.5 47.7 50.6 50.9 53.0 55.0	506 507.5 543.0 600.5 596.5 652 652 697.5	72.0 74.3 74.1 76.3 76.2 78.3 78.05	
				278 300 302	55.3 56.9 57.0	695.5 739.2	77.9 79.8	

	30 %
1 % (second series)	148.5 27.9 337 46.3
143 40.4 348 60.8 145 41.1 352 60.9	156.6 29.1 402.5 50.6 161.5 29.6 403.5 50.6
147 41.3 404 64.3 181 45.5 405 64.3	178.5 31.7 449.0 53.4 178.5 31.8 451.5 53.55
183 46.0 452.5 67.1 186.5 46.2 453.5 67.1	187.5 32.8 453.5 53.6 191.5 33.4 501.5 56.2
200 47.7 497.5 69.1 202 48.0 499 69.3	196.5 33.8 502.5 56.2 243 38.9 549.5 58.6
231 50.9 551 71.6 233 51.1 595.5 73.6	245 39.1 601.0 61.2 251 39.5 602 61.2
262,5 54.2 597.5 73.8 258,5 53.5 650 76.1	253 39.6 603 61.25 302 43.7 650 63.2
258.5 53.6 695.5 78.5 278.5 55.3 695.5 78.4	303 43.7 651 63.3 351.5 47.2 700.5 65.3
282 55.5 742 80.05 295.5 56.6 742 79.9	346.5 46.95 698 65.3 333 45.95 737 66.6
20 %	40 %
117 27.2 357 52.5	176 27.6 538 55.0 186 28.8 540 55.3
128 29.8 446 57.7	191.5 29.6 639 59.9
141.5 31.9 497.5 60.7	348.5 43.8 641 59.9
144 32.4 498.5 60.8 147 32.7 542.5 63.0 173.5 36.2 542.5 62.9	451.5 50.3 734.8 63.7
177.5 36.6 598.5 65.55	40 % (second series)
253 44.5 636 67.1	157 25.6 448.5 50.4 165.5 26.6 449.5 50.4
295 48.0 647 67.65	176.0 28.1 524.5 54.5 180.5 28.6 527 54.65
296 48.0 692.5 69.4 354 52.2 693 69.4	183 28.8 543 55.45 184 29.1 544 55.5
356 52.4 730.5 70.7	193.5 30.2 596 57.9 199 30.8 599 58.0
20 % (second series)	245 35.7 645.5 60.3 252 36.2 646.5 60.3
121.5 28.1 349.5 51.7 127.5 29.1 397.5 54.8 131.5 30.2 399 54.9	306.5 40.7 690.5 62.2 307.5 40.85 694.0 62.25
133.5 30.6 448 57.9	351.5 44.2 718.5 63.1 353.5 44.3 718.5 63.05
136 30.9 449.5 58.0 159.5 34.1 498.5 60.7	404.5 47.7 738.5 63.8 406 47.75
159.5 34.1 498.5 60.7 162.5 34.4 499.5 60.7 169.5 34.9 548.5 63.0	50 %
195 38.2 549.5 63.05 196 38.4 598.5 65.2	181.5 26.6 437 47.9 192.5 27.8 441 48.0
233 42.2 644 65.25 237 42.6 645 67.1 249.5 43.7 712 69.7	204.5 29.2 443 48.1
251.5 43.8 716 69.9	31.4 526.5 52.7
277 46.0 743.7 71.2	313 39.4 626.5 57.6
20 % (third series)	315 39.6 730 61.9 318 39.7 730 61.85 316.5 39.7
159.5 34.1 400 55.0 163 34.7 400 55.1 164 35.0 445.5 57.8	
196.5 38.6 445.5 57.7	50 % (second series)
198.5 38.75 547.5 63.05	146.5 22.1 349 42.2 152.5 22.8 401.5 45.8 157.5 23.6 406 46.0
225 40.5 549.5 63.1 249 43.8 601.5 65.9	
247.5 43.7 602.5 65.8 274 46.1 660 68.0	169.0 25.2 452.5 48.85 172.5 25.7 496.5 51.3 176.5 26.1 498 51.4
275.5 46.2 701.5 69.7 302 48.2 705 69.9	176.5 26.1 498 51.4 203.5 29.3 548 53.9 205.5 29.4 597 56.2
303 48.3 703 69.8 344 51.5 739 71.1	252. 5 34.3 648 58.5
	254.5 34.6 647.6 58.45 309.5 39.4 693 60.5
	314.0 39.6 745.3 62.5

60 %	80 % (second series)
199.5 27.3 399.5 44.0 202.5 27.6 502 50.2 206.5 27.8 504 50.2 209.5 28.1 620 55.9 297.5 36.8 623 56.1 299.5 36.9 625 56.2 301.5 37.0 735.5 60.85 397.5 43.9	170.5 21.6 360 39.4 174.5 22.1 405 42.4 175.5 22.3 407.5 42.6 194 24.4 456.5 45.6 195 24.5 458.5 45.7 220 27.5 510.5 48.6 250 30.6 513 48.8 251.5 30.7 516.5 48.9 280.5 33.3 551.5 50.7
60 % (second series) 156.5 21.6 352 40.9	281.5 33.35 554 50.8 310 35.8 609 53.3 312 36.0 650.5 55.2 317.5 36.3 691.5 56.9 357 39.2 742.2 58.9
159,5 22.1 396 43.9 161 22.5 398 44.0 165 23.0 450 47.2 168 22.4 453 47.4 198,5 27.0 500 50.1 200,5 27.35 550.5 52.65	90 % 191.5 23.1 398 40.7 196.5 23.6 458.5 44.4 208.5 25.1 464.5 44.7
227 30.2 550.5 52.7 228.5 30.4 607 55.3 244 32.1 642.5 56.9 246 32.2 643.5 57.0 297.5 36.7 696.5 59.2 300 36.9 701.5 59.4 351 40.9 739 61.0	213.5 25.7 531.5 48.4 214 25.6 533.5 48.4 216 25.8 558.5 49.6 255 29.8 560.5 49.7 254 29.6 610.5 52.0 263 30.5 612.5 52.1 305.5 34.1 615 52.2 308.5 34.3 643 53.4
70 % 196.5 25.9 399 43.1 208.5 27.0 502.5 49.2 215.5 27.9 505 49.4	311 34.4 645 53.5 346 37.35 709.5 56.2 350 37.45 715.5 56.4 396 40.6 737.5 57.3
215.5 27.9 505 49.4 228.5 29.4 507 49.5 257.0 32.2 592.5 53.7	90 % (second series)
228.5 29.4 507 49.5 257.0 32.2 592.5 53.7 260 32.4 595 53.8 298 35.7 674 57.5 298.5 35.8 680 57.7 301.5 36.0 684 57.8 395 42.9 729.5 59.7	194,5 23,4 450 43,9 197 23,6 452 44,0 224 26,5 496 46,5 254 29,6 498 46,5
70 % (second series)	252 29.4 557.5 49.5 254 29.6 558.5 49.6 276.5 31.6 592.5 51.2
163,5 21.7 400 43,3 177.5 23.8 404.5 43,5 181 24.1 458.5 46.8 186,5 24.7 459.5 46.95 190 25.1 504.5 49,3 213,5 27.6 506.5 49,4 216,5 28.1 555 51.95	254 29.4 337.3 49.3 254 29.6 558.5 49.6 276.5 31.6 592.5 51.2 277.5 31.7 692 53.4 296.5 33.5 693 55.5 347.5 37.3 693 55.4 348.5 37.35 745.7 57.6 395.5 40.5 745.7 57.7
224.5 28.85 556 52.0 251.5 31.7 602 54.1 254.5 32.0 604 54.2 305 36.25 649.5 56.2 307.5 36.5 695 58.1 351.5 39.95 696 58.1	188,5 20.7 498 44.6 192,5 21.1 506 44.9 194,5 21.3 507,5 45.0 195 21.45 548.5 47.2 197 21.7 554.5 47.5 218 23.9 593.5 49.4 222 24.3 596.5 49.5
354.7 40.2 748.5 60.3 80 %	254,5 27,6 645 51,7 261,5 28,2 647 51,7 295 31,2 603 49,7
176 22.3 464 46.0 183.5 23.4 466.5 46.1 189.5 24.1 468 46.2 193.5 24.5 499.5 48.0 200 25.2 502.5 48.2 253 30.9 548.5 50.6 262 31.6 550.5 50.7 268 32.2 552.5 50.75	218 23.9 593.5 49.4 222 24.3 596.5 49.5 254.5 27.6 645 51.7 261.5 28.2 647 51.7 295 31.2 603 49.7 301 31.7 615 50.2 308 32.3 640.5 51.5 345 35.0 642.5 51.6 347 35.2 695.5 53.9 348 35.3 697.5 54.0 397.5 38.5 697.5 54.0 399.5 38.7 737.5 55.6 403.5 39.1
299 34.8 596.5 52.8 302 35.1 599.5 53.0 307 35.4 644.5 55.0 355 39.0 647.5 55.1 357.5 39.2 647.5 55.1 359 39.4 687.5 56.7 398 41.9 689.5 56.8 403 42.3 746 59.0	318 33.1 548 47.3 353.5 35.7 599.5 49.8 355.5 35.9 601 49.8 397 38.7 650 52.0 398 38.8 698.5 54.1 415 41.7 700 54.2 498.5 44.7 739.5 55.7 547 47.2

					Abegg, 18	94		
Taylor, 19	99				N	f.t.	N	f.t.
p			b.t. 10 %	20%	0.500 1.900 2.009	-0.92 -1.898 -4.077	3.000 4.000 5.000	- 6.55 - 9.32 -12.35
100 150 200 250	6 6 7	0.2 6.5 1.6	33.7 41.6 47.7 52.85	33.0 39.0 43.9	Waddell,	1899		
300 350	7	'5.9 '9.65	57.1 60.8	48.2 51.8	9,	f.t.	%	f.t.
400 450 500 550 600 650 700 750 800	8 8 9 9 9 9	36.0 38.7 91.2 93.5 95.7	64.05 66.95 69.5 71.9 74.05 76.25 78.3	55.05 58.0 60.75 63.2 65.55 67.7 69.6 71.4 73.05	0.47 1.40 1.69 2.98 3.84 3.95 4.20 6.35	-0.16 -0.46 -0.56 -0.96 -1.22 -1.29 -1.38 -2.13	19.23 10.57 11.07 11.98 12.45 12.86 14.89 17.47 18.78	- 3.43 - 3.65 - 3.82 - 4.25 - 4.50 - 4.44 - 5.34 - 6.35 - 7.11
p	30 %	b.t 40 %	. 50 %	69 %	7.95 9.26 9.40 10.23	-2.67 -3.11 -3.09 -3.44	19.90 21.26 21.64	- 7.62 - 8.41 - 8.34
150 200 250 300 359 400	28.05 34.3 39.35 43.5 47.15 50.4	24.9 31.0 36.05 40.2 44.0 47.3	22.6 28.8 34.1 38.4 42.3 45.6	27.35 32.6 36.9 40.75 44.1	Jones and	Getman, l	904 and Jones	, 1904 f.t.
450 500 550 600 650 700 750 800	53.45 56.15 58.6 61.0 63.25 65.25 67.1 68.85	50.4 53.2 55.8 58.15 60.4 62.45 64.35 66.2	48.7 51.45 53.95 56.35 58.65 60.7 62.65 64.45	47.2 50.05 52.7 55.05 57.35 59.5 61.4 63.25	0.5 1.0 2.0 3.0 4.0 5.0	- 0.930 - 1.919 - 4.110 - 6.800 - 9.700 -13.000	6.0 7.0 8.0 9.0 10.0	-16.000 -20.000 -24.000 -29.560 -33.750
р	70 %	b.t 80 %	90 %	100 %	Benjamin,	1932		
200 250	26.35 31.5	25.2 30.5	24.1 29.2	21.95 27.1	mo	1 %	f.t.	E
300 350 400 450 500 550 600 650 700 750 800	35.9 39.8 43.3 46.3 49.05 51.7 54.0 56.3 58.45 60.4 62.15	34.9 38.6 42.15 45.2 48.05 50.7 53.0 55.2 59.15 60.9	33.6 37.45 40.9 43.9 46.7 49.2 51.55 53.75 55.8 57.8 59.7	31.65 35.5 38.9 42.0 44.75 47.3 49.75 52.0 54.2 56.1 57.95	11 15 21 30 40 52 72 72	.2 .0 .6 .0 .8 .5 .8 .7 .5 .0 .2	- 2.2 - 6.2 -11.0 -16.6 -20.6 -24.5 -29.7 -34.0 -41.2 -56.5 -64.4 -94.4	
Beckmann,	1888				Lemonde,	1029		
%	f.t.	Ж	f	.t.	Lenonde,		D	
0.662 2.416 6.221	-0.220 -0.770 -1.930	12.35 18.52	-3. -5.	820 660		vol % 0.5 29 40	17° 1.25 1.00 0.88	

WATER + ACETONE

Properties of phases . Density .	Van Aubel, 1895		
rioperties of phases . Density .	% d	K	đ
Jahn, 1891	0.00 0.9992 13.27 .9827 45.24 .9340 55.7 .9125	73.32 88.69 100.00	0.8698 .8288 .7952
19.985 .97152 0 .9982	Sapozhnikov, 1896		
Mc Elroy and Krug, 1892 and Krug and Mc Elroy, 1893	% 0°	d 15°	30°
## 15° 20° 25° 100 0.79726 0.79197 0.78630 95 - 80748 80205 90 - 82197 81653 85 - 83588 83073 80 - 84981 84454 75 0.86442 86129 .85533 70 .88085 87545 87073 65 .89271 .88785 .88282 60 .90447 .89953 .89477 55 .91526 .91054 .90603 50 .92549 .92051 .91673 45 .93518 .93091 .92678 40 .94488 .94075 .93691 35 .95293 .94931 .94547 30 .96092 .95748 .95411 225 .96783 .96490 .96221 20 .97444 .97210 .96961 15 .98038 .97831 .99604 10 .98681 .98513 .98342 5 .98031 .98526(?) .99712	100.00 0.81434 97.66 82118 95.58 82727 93.76 83260 91.91 83793 90.014 84329 87.5 85022 82.38 86395 77.469 87669 75.46 88172 69.98 89529 64.949 90675 60.018 91760 55.123 92780 52.32 93333 52.195 93368 51.19 93553 48.028 94148 44.11 94835 40.024 95509 30.24 96907 25.059 97529 19.957 98060 18.014 98247 17.08 98338 14.985 98529 10.022 93972 7.933 99154 4.933 99154 4.933 99154	0.79760 .80439 .81081 .81622 .82170 .82720 .83431 .84814 .86146 .86665 .88083 .89246 .90378 .91488 .92042 -0.92275 .92911 .93662 .94413 .94747 .95202 .96016 .96766 .97447 .97692 .97804 .98061 .98659 .98659	0.78033 .78752 .79381 .79944 .80500 .81057 .81785 .83226 .84604 .85118 .86558 .87760 .88938 .90065 .90681 - 0.90933 .91605 .92414 .93229 .93600 .94101 .95879 .96672 .96672 .96472 .97421 .98130 .998851
% d 20° 25°	1.035 .99865 0.000 .99987	0.99913	0.99567
100 0.79197 0.78630 95.01 .80717 .80174 90.09 .82172 .81626	Drude, 1897		
87.88 .82784 .82278 80.04 .84972 .84443	% d	%	d
75.02 .86342 .85796 70.04 .87495 .87051 60.06 .89920 .89469 50.10 .92078 .91656 40.03 .94057 .93695 30.83 .95606 .95286 19.67 .97270 .97024	0 0.999 25.0 0.967 50.0 0.924 66.9 0.888	80.2 89.9 94.9 100	0.854 0.827 0.813 0.796
19.67 .97270 .97024 10.01 .98507 .98337 0 .99823 .99707	Rudorf, 1903		
	% N d	%	N d
	100, 20 13, 65 0, 79, 73, 00 10, 92 0, 86, 42, 27 6, 827 0, 93, 33, 25 5, 46 0, 95, 20, 46 3, 413 0, 968	3 2.50 3 0	1.706 0.985 0.853 0.988 0.426 0.992 - 0.997

Jones and (Getman, 1904	and Jones,	1904	Reilly and	Ralph, 1920		
N N	d	N	d	- 1/2	đ	K	đ
0.0 0.5 1.0 2.0 3.9 4.0		0° 5.0 6.0 7.0 8.0 9.0 10.0	0.953112 .942992 .930052 .916640 .900848 .883520	100 94.98 89.58 79.92 71.10 57.46	0.79091 .80689 .82221 .85020 .87215 .90469	50.03 37.49 29.62 19.31 9.93	0.92057 .94499 .95779 .97307 .98588
Herz and Kno	och, 1905			Barr and B	ircumshaw, 19	21	
d	%	đ	%	-	% mo	1 %	d
0.99707 0.98574 0.97436 0.96164 0.95590	0 10 20 30 40	5° 0.92896 0.88186 0.82328 0.78682	50 70 90 100	80 70 61	0 10 9.9 7 0.4 5 0.9 4	3.4 .8 6.1 .8 3.3 .8 2.9 .8	78502 31560 34249 36788 99151
Schwers, 191	1			30	$\frac{1}{3}$	$7.6 .9 \ 1.8 .9$	93502 95357 96247
t	đ	t	đ	23		8.7 .9	96414 97743
0.0 22.45 34.6	0.99025 0.98431 0.97945	43.35 54.35 61.4	0.97526 0.96932 0.96511				8015
2.0		20 %	0.05000	Sandonnini	and Gerosa,	1925	
0.0 20.4 34.6	0.98090 0.97176 0.96394	44.3 54.55 62.2	0.95809 0.95141 0.94592	×	đ	%	đ
0.0 19.5 34.15 0.0 20.2 34.2	0.97025 0.95832 0.94848	30 % 42.65 54.15 62.65 40 % 44.25 62.35	0.94230 0.93347 0.92643 0.92105 0.90472	100 90.14 80.14 70.24 59.49 49.46	0.7875 .8159 .8441 .8706 .8951 .9171	39.46 30.11 20.13 11.40	0.9378 .9558 .9697 .9887 .9972
0.0 23.8 34.25	0.91811 0.90871	50 % 44.55 54.0	0.89907 0.89014	Naville, 1	926		
0.0 19.7 34.2	0.91758 0.90012 0.88586	44.35 54.55	0.87574 0.86504	K	d 20°	%	d
0.0 21.55 33.75	0.89581 0.87450 0.86208	70 % 43.8 54.2	0.85148 0:84020	0 10 20 30 40	0.998 0.986 0.974 0.958 0.942	60 70 80 90 100	0.900 0.877 0.852 0.825 0.795
0.0 19.7 34.35	0.87096 0.85071 0.83502	43.7 54.25	0.82466 0.81277	50	0.921		
0.0 20.9	0.84467 0.82327	34.0 43.8	0.80880 0.79716				
0.0 18.07	0.81252 0.79514	34.5 44.7	0.77621 0.763 23				

Graffunder a	nd Heymann,	1931					
mol%	d	mo1%	đ	Griswold a	nd Buford, 194	9	
				mol %	đ	mol %	đ
100 73.85 58.19 42.37	25° 0.7865 .8155 .8390 .8695	26.92 16.74 0	.9080 .9378 .9971	2.9 8.2 11.9 13.6 19.7	0.98602 0.96871 0.95227 0.94955 0.92860	30.8 32.3 42.7 63.5	0.89990 0.89243 0.86830 0.83000
		oanyer Jr.,]		- Jacobson, 1	951		
mo1 %	d	mo1 %	d	vol %	đ	vol %	d
100	0.7855	25° 17,1	0.9370		20°	 _	
73.6 55.4 42.0 31.8 23.7	. 8148 . 8438 . 8692 . 8934 . 9165	11.8 7.0 3.3 0	.9543 .9694 .9833 .99427	0.0 10.1 19.4 29.7 39.6 49.4	0,9982 .9868 .9758 .9626 .9476 .9309	59.5 69.8 78.9 89.8 100.0	0.9105 .8879 .8640 .8316 .7929
Young, 1933		· · · · · · · · · · · · · · · · · · ·	··	Griffiths,	1952		
- %	đ	%	d	78	đ	%	d
100.000 99.023 98.103 96.911 95.993 95.088 90.125 78.238 69.208 59.520 49.880	0.79061 .79349 .79631 .79974 .80259 .80544 .82015 .85332 .87647 .89969 .92056	41.380 30.290 22.554 19.505 11.893 10.308 7.368 4.706 2.479 0.000	0.93716 .95667 .96837 .97262 .98241 .98469 .98858 .99180 .99532 .99826	9.82 21.23 29.62 39.98 51.43	0.99706 .98573 .98573 .95939 .95611 .93724 .91402	60.49 71.89 80.74 89.15 100.00	0.89367 .86578 .84205 .81872 .78507
				:	nudgar and Lev		
Tomonari, 19	936			100.0	d 2 0.7848	5° 50,0	0,9159
%	đ	£	đ	90.0 80.0	. 8146 . 8432	$\frac{40.0}{30.0}$.9361 .9537
100 80 60	20° 0.7908 .8490 .8993	40 20 0	.9410 .9721 .9982	70.0	. 8695 . 8942	20.0	.9700 .9831

Sapozhnikov, 1896		Viscosity	and surface	tension		
π. 0_15°	106 15-30°	Rudorf, 19	03			
100 1374	1412		%	N	n (wat	er=1)
97.66 1363 95.58 1328 94.82 1322 93.76 1312 92.44 1296 91.906 1291 90.014 1272 87.507 1247 84.95 1225 82.16 1193 77.469 1158	1369 1370 	73 42 33 20 10		25° 13.65 10.92 6.827 5.46 3.413 1.706 0.853 0.426	0.648 0.917 1.568 1.667 1.418 1.211 1.106 1.044	
75.46 1140 69.96 1097 64.949 1051	1159 1136 1093	Jones and Me	Master, 19	06		
60.018 1005 55.123 943 52.32 922 51.19 910	1047 1008 972 957	%	η ° 25°	%	η 0°	25°
48.028 876 44.11 824 40.024 765 38.038 743	926 878 826 799	0 17 25 29 50 30	30 1276	75 100	1700 409.7	890.4 323.7
35.386 698 30.24 612 25.06 520 19.957 417 18.014 376	761 690 606 528 483	0 177 25 286 50 299	38 1205	75 100	1695 504.5	872.7 397.7
$\begin{array}{cccc} 17.08 & 362 \\ 14.985 & 316 \\ 10.022 & 211 \end{array}$	465 434 355	Jones and	Mahin, 1909			
7.536 164 5.414 128 4.933 123 2.541 79	- 2770		X	0°	n 25°	
0 46 Jacobson, 1951	-	2 5 7 10	0 5 0 5 0	1778 2908 3005 1659 429	891 1250 1305 885 346	
vol % π vol %	π					
20° 0.0 45.39 59.5 10.1 42.66 69.8 19.4 41.30 78.9		Muchin, 1	913	9	K	η
29.7 41.07 89.8 39.6 42.47 100.0 49.4 45.25	73.57 89.09	0.0000 0.0405 0.6573 1.8075	1002 1011 1019 1050	20° 3.3 9.3 16.3	2935 1240 7597	1088 1247 1361
vol % sound velocity vol % m/sec.10 ⁻⁵	sound velocity m/sec.10 ⁻⁵					
20° 0 1485.7 59.5	1488.0	Davis, Hu	ghes and Jon		n	
10.1 1541.2 69.8 19.4 1575.2 78.9 29.7 1590.5 89.8 39.6 1576.4 100.0	1420.9 1356.8 1278.5	76	15°	25°	უ <u>35</u> °	45°
39.6 1576.4 100.0 49.4 1540.7	1189.8	100 75 62.5 50 37.5 25 12.5	1115 1516 1774 1829 1442 1137	346 886 1158 1329 1361 1266 1089 895	721 910 1026 1050 975 862 725	599 731 818 827 779 700 603

Jones and al., 1915	Morgan and Scarlett, 1917
vol% n 15° 25° 35°	% o 0° 15° 45°
100	0 75.87 71.86 68.46 5 58.80 54.54 51.52 10 52.25 47.81 44.67 20 43.98 39.83 36.87 25 41.06 36.98 34.00 30 38.73 34.73 31.98 40 34.94 31.50 28.94
Sandonnini and Gerosa, 1925	50 32.32 29.25 26.81 75 28.50 25.75 23.54 85 27.46 24.63 22.40
% n % n	90 26.92 24.08 21.79 95 26.23 23.19 20.89 100 25.17 22.17 19.78
25° 100 321.0 39.46 2176 90.14 573.7 30.11 1940 80.14 996.0 20.13 1786 70.24 1347 11.40 1231 59.49 1826 0 893 49.46 2110	Sandonnini and Gerosa, 1925 # # # # # # # # # # # # # # # # # # #
Ernst, Litkenhous and Spanyer Jr., 1932 mol % η mol % η	100 25.81 49.46 34.2 90.14 26.90 39.46 38.1 80.14 29.21 30.11 41.4 70.24 30.15 20.13 49.0 59.49 32.5 0 74.0
25° 100 343.9 17.1 1325 73.6 454.9 11.8 1336 55.4 626.1 7.0 1290 42.0 836.5 3.3 1121 31.8 1083.0 0 893 23.7 1240.0	Bennett, 1929 g o (arbitrary units) g o (arbitrary units) 20°
Varenne and Godefroy, 1904	0 111.5 34.5 57.5 1.6 100.0 44.2 52.5 3.2 93.5 54.3 49.8
% min. of flow % min. of flow	6.5 86.0 64.9 46.2 11.5 76.6 76.0 44.5
	16.5 70.8 88.9 41.5 25.3 63.2 100 38.8
Kling, 1905	Ernst, Litkenhous and Spanyer Jr., 1932 mol % o mol % o
% min. of flow % min. of flow	25°
0 177 17° 39.32 417 5.57 189 40.12 434 11.73 212 40.30 436 17.35 237 40.48 436 21.57 259 40.83 430 23.84 273 41.52 425 25.48 290 42.86 437 27.06 306 44.13 453 28.52 320 44.75 450 29.83 333 46.24 443 31.37 37 46.66 440 32.89 360 47.09 438 33.77 375 47.64 430 35.06 380 48.72 395 36.71 390 50.00 382	100 22.99 17.1 33.91 73.6 25.56 11.8 37.00 55.4 26.77 7.0 40.93 42.0 27.72 3.3 47.27 31.8 29.28 0 71.97 23.7 31.60

To in all	aum, Ganel:	ina and	Cortalov	. 1051		Homfr	ау, 1905			
							Z	n _D	%	n _D
vol %	mol %	0°	5°	10°	15°		0.0 1	.3335	80.2	. 3668
0 2 5 10 15	0.0 0.5 1.1 2.3 3.4	75.70 64.54 61.22 55.12 51.35	74.96 63.84 60.52 54.27 50.50	74.27 63.15 59.70 53.50 49.57	73.51 62.53 58.90 52.60 48.73	ii :	50.0	. 3513 . 3637 . 3671	89.9 94.9 100.0	.3648 .3629 .3606
20 40 70 100	5.4 14.1 36.5 100	47.34 37.70 30.45 26.24	46.50 37.08 29.91 25.48	45.72 36.31 29.37 24.78	44.87 35.77 28.91 24.09		vietski, l	908	n _D	
mol %			σ			mol :	% %	16°	18°	20°
		25°	30°	35°	40°	100 98	100 99.37	1.36077 .361035	1.35988 .360056	1.35900 .359172
0 0.5 1.1 2.3 3.4 5.4 14.1 36.5	72.75 61.99 58.13 51.72 47.80 44.23 35.16 28.14 23.62	71.98 61.37 57.42 51.02 47.11 43.41 34.39 27.68 23.00	60.75 56.65 50.26 46.26 42.63 33.85 27.06	70.37 60.06 55.95 49.45 45.41 41.86 33.15 26.52 21.77	69.52 59.44 55.13 48.73 44.50 41.09 32.61 25.75 21.08	96 94 91 88 85 82 78 74 70 66	99.37 98.72 98.06 97.02 95.94 94.81 92.90 91.95 90.17 88.26 86.21 84.02	.361302 .361369 .362014 .362459 .362904 .363349 .363927 .364550 .365095 .365680	.360323 .360590 .361035 .361480 .361935 .362370 .362993 .363571 .364150 .364690	.359348 .359880 .360412 .360857 .361302 .361925 .362548 .363171 .363705 .364150
	kov, 1896	ectrical	constan	ts n		62 50 46 44 30 20 15 10 5	76.31 73.40 71.69 58.00 44.61 36.25 26.36 14.50	.367130 .367320 .367360 .36595 .362210 .35838 .35278 .34448	.366220 - 1.36505	.365320 1.364195 .359967 .356973 .351635 .34390 .33313
100	1 2500	16.5°		1 26	(20	Glazu	now, 1914			
100 97.27 95.03	1,3592 ,3621 ,3633	l9 32	62.49 59.41 52.54	1,366 ,365 ,364	590 104	m	ol %	n _D	mol %	n _D
92.28 89.97 87.58 85.13 82.16 80.02 78.26 77.21 76.3 74.37	.3647 .3651 .3655 5 .3666 .3666	79 1 <i>7</i> 81 89 38 55 83	49.94 45.00 42.472 39.99 37.49 34.67 30.00 25.12 20.39 15.03	.363 .361 .360 .359 .354 .354	173 153 243 843 845 145 150 824	2	0 9.8 0.57 4.8 3.33	at roo 1.33232 .35009 .35940 .36135 .36261	50 69.4 85.3 100	1,36315 .36208 .35957 .3 5 545
70.00 67.49	. 3668 . 3668	83 83 56	10.05 5.41	.344 .340 .33	475 046 708	Erns	t, Litkenh	ous and Span	yer Jr., 193	2
64.98	.3663	38 	0	.33	320	m	ol %	ⁿ D	mol %	n _D
Druđe,	1897					1	00	1.3570	5° 17.1	1.3579
%	n	D	%		n _D		73.6 55.4 42.0	.3616 .3638 .3645	$ \begin{array}{c} 11.8 \\ 7.0 \\ 3.3 \end{array} $. 3529 . 3470 . 3401
0 25.0 50.0 66.9	:	3335 3513 3637 3671	80.2 89.9 94.9 100		1.3668 .3648 .3629 .3606	li .	31.8	.3635		.3330

				Åkerl	of, 1932				
Tomonari, 1	936			%	20°		ε 30°	40•	50°
%	a^n	%	D O	 				72.10	
100 80 60	1.35916 .36524 .36503	0° 40 20 0	.35905 .34770 .33299	0 10 20 30 40 50	80.37 74.84 68.38 62.48 56.00 49.52 42.93 36,51	78.34 73.02 66.98 61.04 54.60 48.22 41.80	76.73 71.37 65.34 59.47 53.23 46.99 40.75	73.12 68.07 62.28 56.77 50.82 44.81 38,86	69.85 65.01 59.45 54.17 48.52 42.81 37.04
Griswold a	nd Buford, 194	9		70 80 90 100	36,51 30.33 24.61 19.56	35.70 29.62 23.96 19.10	34.63 28.74 23.38 18.67	33.03 27.50 22.32 17.80	31.44 26.20 21.26 16.98
mol%	n _D	mol%	n _D						
2.9	25° 1.33881	42.7	. 36322	Albr	ight, 1937	7			ì
8.0	. 34726 . 34688	46.4 53.0	. 36290 . 36271	 		ε	9	<u></u>	ε
8 2 11.9 13.6	. 35281 . 35357	63.5 65.2 71.5	1.36145	l			25°		
19.7 30.8 32.3	.35836 .36196 .36227	71.5 81.5	.36038 .35887	10	.00 .01	78.48 73.08	60 70	.07	43.39 37.33
				29	.96 .98	67.62 61.90 55.74	80 91	. 23	31.50 25.41
Othmer, Ch	udgar and Levy	, 1952		39 50	.93 .24	55.74 49.34	100.	.00	20.74
× ×	n _D	%	n _D						
		25°		Davi	s, Hughes	and Jon	es, 1913		
100.0 90.0 80.0 70.0 60.0	1.35636 .36020 .36270 .36348 .36283	50.0 40.0 30.0 20.0 10.0	1.36078 .35745 .35272 .34671 .33983	%		15°			5°
	.30233	10.0		12 25 37	.5	25.9 25.2	32.3	40.2 3	8.6
Drude, 1897	7			37 50 62 75	.5	19.4 13.4 11.3 7.3	171 '	20.9 2 17.7 2	8.2 3.9 1.2 2.8
%	ε	%	ε					=====	
0 25.0	80 .9 67 .0	80.2 89.9 94.9	31.3 26.2 23.5	Bajo	uline and	Merson,	1939		
50.0 66.9	50.6 38.8	100	20.5	vol :			a-sound ab	-	10000h Ta
				l	38000k			OUUK HZ	19000k Hz
Graffunder a	and Heymann, 19	931		0 10 20 30	0.42 0.33 0.38 0.59	2	room t. 0.25 0.20 0.23 0.38	0.19 0.16 0.19 0.26	-
mol%	ε	mo1%	ε	40 50	0.9 1.4	9 (0.58 1.03	0.44 0.89	0.25 0.37
100 73.85	20.87 26.24	26.92 16.74	47.30 56.55	60 70 80 90	0.7: 0.3:		1.22 1.19 0.89 0.51	1.01 0.96 0.69 0.34	0.51 0.56 0.45
58.19 42.37	26.24 30.26 37.43	0	79.45	100	0.3	5 	0,23 	0.17	-

Smith and S	mith, 1918			Sandonnin	i and Gerosa,	1925	
%	χ	%	X				(cal/g)
100 90.4 74.8 59.8	-0.572 .590 .614 .628	20° 45.7 29.6 10.2 0	_0.650 .670 .697 .714		20.0 0.0 25.0 0.0 30.0 0.0 35.0 0.0 40.0 0.0	975 -6 965 -6 950 -7 936 -7 924 -7	379.5 12.5 12.5 135.0 45.0 145.0 135.0
Ranganadham	1, 1933			 			05.0
%	X	 %	X		1005		
	at	room t.		Sandonnin	·		
100 65.16	-0.5968 .6446	42.60 40.26 0	-0.6728 .6792	# %	U	% -20°	<u>u</u>
Schwers, 19	012	(α) magn.	t	100 94.89 90.11 85.30 80.09 70.31 60.20	0.5248 .5881 .6370 .6832 .7101 .7985 .8399	50.22 39.93 30.50 25.20 20.36	0.8764 .9253 .9504 .9662 .9755 .9941 .9991
	5893 Å	5460 Å 4360	0 Å	%	Q mix	%	Q mix
100 100 23.799 49.535 73.552 0 0	0.7150 0.7001 0.8355 0.8122 0.7751 	0.8444 1.38 0.8264 1.35 0.9893 1.61 0.9610 1.57 0.9184 1.50 1.0000 - 0.9985 1.61 0.9963 1.61	62 31.5 03 16.0 22 15.3 63 16.0 7 15.4	80.96 70.09 59.71 50.00 44.40 40.00 35.00	15 -164.9 -322.7 -548.1 -680.3 -727.0 -743.6 -769.4	33.33 30.00 25.00 18.81 15.20 10.00 5.00	-765.0 -755.5 -711.2 -632.7 -509.8 -394.5 -200.5
Scharf, 19	32			Mobius, 1	955		
vol %	α magn.	vol %	α magn.		ol 🖇 wt	% entha	lpy
	$\lambda = 589$	93 Å 20°	 -		20)°	
0 9.77 19.98 39.90 α magn.	2.141 2.119 2.120 2.114 in degrees	50.00 59.97 80.08 100.00	2.085 2.066 1.979 1.852	11 20 33 40	0 .19 15.0. .98 30.49 .09 44.7 .05 61.44 .46 68.6 .34 76.5	9 -185.5 6 -202.7 9 -158.6 6 -116.0	
Thermal con	nstants .			66 72 73 80 85	.02 86.2 .28 89.3 .71 90.0 .88 93.1 .88 95.1	3 + 17.2 7 + 41.7 4 + 47.6 7 + 67.2 5 + 66.5	4 8 4 3 1
Sandonnini,				100	.08 97.46 100	0 + 42.4	3
80.96 70.09 59.71 50.00 44.44 40.00 35.00 33.33	0.698 0.795 0.845 0.889 0.915 0.930 0.945 0.951	30.00 25.00 19.81 15.20 10.00 5.00	0.955 0.570 0.981 0.985 0.990 0.994 1.000				
				<u> </u>			

Water + Met	thyl ethylket	one (C ₄ H ₈ ())		Marshall, 190)6		
Heterogeneo	ous equilibri	1			%	758.4	b.t.	50 mm
eqilibri	um L+V				100		.50	79.56
Marshall,	1906				99.08 98.17	77 76	.65 .36	77.61 76.42 75.54
mol %	p	p ₂	p ₁		97.28 95.54 93.06	74 73	.43 .76	74.49 73.82
100	619.7		0		89.19 88.45 87. 02	73	.57	73.64 73.63 73.66
95 90	680.0 714.0	590.0 568.0	90.0 146.0		85.64 84.29	73	.61	73.67 73.67
85 80 75 70 66.06	735.0 748.0 757.0 760.4 760.9	532.0 519.0	188.0 216.0 238.0 252.4 258.2	!	Az = 88.621	% b.t. = :	73,59 d at	15° = 0.83956
65 60 58.72 52.02	760.9 759.4 759.4 759.4	501.6 3 497.0 495.8 495.8	259.3 262.8 263.6 263.6		Boeke and Har	newald, 1942		
	273.0	0 b.t.	273.0		€ V	b.t.	% V	b.t.
	764.2 mm	763.5 mm	760 mm		19.0 42.1	98.1 95.5	89.4 91.5	74.0 74.8 75.5
0 0.4 1.2 2.7 4.6 6.4	-	100.13 99.3 97.3 93.1 87.4 83.3	100.0 99.2 97.2 93.0 87.3 83.2		59.4 69.1 73.3 78.9 84.7 86.9	92.6 89.3 86.2 83.1 77.9 75.2	92.3 93.3 94.7 96.9 98.3	76.1 77.0 78.0 78.6
8.2 9.9 11.5		80.8 78.8 77.2	$80.7 \\ 78.7 \\ 77.1$		%	b.t.	%	b.t.
11.9 12.9 14.0 15.9 16.3 16.6 16.9 17.2 17.8 17.8 18.2 18.2 18.3 19.6 21.3	76,64 75,43 74,54 74,52 74,40 74,23 74,22 74,03 74,05 74,05 73,94 73,93 73,91 73,91 73,87	76.2	76.47 76.1 75.26 74.37 74.35 74.06 74.05 73.95 73.86 73.88 73.77 73.76 73.74 73.74		0.1 0.3 0.4 0.5 0.8 1.1 1.2 1.4 1.5 1.9 2.2 2.2 2.2	99.0 98.0 97.0 96.0 95.0 94.0 93.0 92.0 91.0 90.0 89.5 89.0 88.5 Az: 89 \$ 78.4 77.7	2.3 2.8 3.2 3.7 4.5 6.0 7.0 9.2 9.2 9.3 11.5 14.7 73.5° 94.4	87.5 86.5 85.5 84.5 83.5 82.5 81.0 78.0 76.0 75.0 74.0
р	1	b.t.	sat. sol.	(L ₂)	97.7 97.3 97.0	76.4 76.2 75.9	93.9 92.2 89.0	74.2 73.9 73.7
760 744 722 700 688 666 644 620 588 560 540	7 7 7 7 7 7 7 7 7 7 7 7 7	2.54 8.73 7.91 5.24 5.38 4.50 3.58 2.63 1.63 1.63	73.62 72.86 72.09 71.30 70.49 69.66 68.80 67.91		96.3	75.4 	87.8	73,6

Othmer and Benenati, 1945	Othmer, Chudgar and Levy, 1952
% b.t.	mol % b.t.
100	760 mm 100
Lecat, 1949 % b.t. 88.6 73.45 Az	
88.6 73.45 Az 100 79.6	

Bruni, 1899	
% Sat.t.	Timmermans, 1911
% sat.t. lower higher	P C.S.T. dt/dp C.S.T. dt/dp
20,00 95,5 119 21,08 86,0 125 23,41 62,0 132 25,41 49,2 135,5 33,48 25,9 145 40,78 16,5 148 50,23 16,5 -	higher 44 % 10wer8.5 E
67.12 22.1 134.5 73.17 28.0 114 75.25 35.9 99.3	53,60 % 10.0 140.9
Marshall, 1906 t	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
73.6 18.00 91.0 18.08 93.5 18.15 Minimum solubility of water in ketone at 15°	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Randall and Mc Kenna, 1951	Timmermans and Kohnstamm, 1913
% t	P C.S.T. dt/dp
L ₁ L ₂ 36.95 86.93 - 2.53 39.74 86.89 - 8.60 45.01 85.90 -18.51	225 + 0.7 +0.096 250 + 3.1 +0.094 300 + 7.8 +0.086 350 +12.1 +0.079 400 +16.05 +0.074 450 +19.75 +0.069 500 +23.2 +0.070 600 +30.2 +0.071
Timmermans and Kohnstamm, 1910 C.S.T.: 137.7 Limits of P (1-155 kg/cm²) dt/dp -0.065	700 +37.3 +0.068 800 +44.1 +0.072 900 +51.3 +0.103 1000 +61.6 +0.106 1050 +66.9

WATER + METHYL ETHYLKETONE

	~		
Bruni, 1899	العبد البدو الحق البدو البدو البدو البدو البدو الجوائدين فيها المقار البدو	و بالحد الله الديد المياسية بلق هند اليو لين لين الدي الديد الدي الديد الديد الديد الديد الديد الديد	Properties of phases
% f.t.	[%]	f.t.	Marshall, 1906
$\begin{array}{ccc} 0.000 & -0.4 \\ 5.715 & -2.1 \\ \end{array}$	54.05	-10.5 -10.9	% d % d
11.43 -3.8 14.48 -4.7 19.66 -6.4 27.91 -8.3 35.15 -9.4	66.22 74.61 79.13 87.18	-11.5 -13.3 -14.0 -17.5	15° 100 0.81005 88.532 0.83980 90.174 .83590 88.197 .84058 88.622 .83959
Timmermans, 1911			Tarasov, Bering and Sidorova, 1936
% f.t.	%	f.t.	% d π
0 0 0 6.00 -1.70 10.00 -2.82 16.80 -4.64 24.75 -6.70 26.60 -7.20 29.95 -7.56 E: -8.45 * L	85,90 89,00 91,00 100	- 8.16 - 8.46* - 8.48* - 9.28 - 10.54 - 86.6	22° 1 0.9986 46.2 3 .9959 45.5 5 .9933 45.0 7 .9908 44.5 9 .9881 43.6 11 .9859 42.95 12 .9844 42.77 13 .9829 42.63 14 .9815 43.07 15 .9802 43.04 16 .9786 42.89
Timmermans, 1919	С.S.Т.	£ 4	15
P kg		f.t.	
10 113.75 150	-21 -10 - 6.1	- 8.5 - 9.5 -10	Boeke and Hanewald, 1942
			% mol % d
Randall and Mc Kenna,	1951		21° 0 0 0.9980
# f.t. 1.5 -0.361 4.3 -0.879 8.0 -1.476 10.2 -1.751 14.6 -2.370 23.4 -3.892 35.7 -5.213 38.9 -5.587 86.9 -5.587 90.7 -5.693	91.0 93.5 97.3 98.9 99.4 99.8 99.8 99.8 99.9	f.t. - 6.033 - 8.807 - 16.53 - 26.09 - 40.10 - 58.75 - 61.28 - 65.53 - 86.64	1.62

Boeke	and Ha	newald, 1942				Water + Ke	tones				
×%		d	%	d	- 	Lecat, 1949)				
0.1		0,9979	2.3	0.005	.0			d C		Az	
0.3 0.4	}	.9976 .9975	2.8	0.995 .994 .993	13	Name		d Comp			b.t.
0.5 0.8 1.1	5	.9973 .9970	3.2 3.7 4.2 4.5	.993 .993	32					·	83,0
1.2	2	.9966 .9965	6.0	.992 .990	22 02	Methyl- propylketon	-	I _{1 0} 0	102.35	86.5	03,0
1.4 1.5 1.9	:	.9961 .9960 .9955 .9955	7.0 9.2 9.9	.989 .986 .985	52 54	Methyliso- propylketon	•	I _{1 0} 0	95.4	87	79
1.9 1.9 2.2 2.2	2	.9952 .9952	11.5 14.7 16.7	.97		Methyl butylketone	C ₆ !	H _{1 2} 0	127.2	-	90
99. 99.	4	0.8057 .8064 .8105	94.4 95.0 93.9	0,828 .817	2	Diethylketo		I _{1 0} 0	102.05	86	82.9
97. 97. 97.	3	.8115 .8123	92.2	. 820 . 824	3						
96.	.3 :======	.8140 ==========	89.0 87.8	. 832 . 835	5 ========	Water + Die	thylketo	ne (C	₅ H _{1 0} O)		
Teite	lbaum,	Ganelina and	l Gotelova	, 1951		Rothmund, 1	898				
vol %	mol %	0°	σ 5 °	100		78	sat.t.		%	sat.	t.
0 0.5 1 5	0 0.1 0.2 1.2 2.3	75.70 70.41 67.33 55.61 47.95	74.96 69.50 66.48 54.76 46.90	74.27 68.78 65.70 53.84 45.85		3.30	homogene 42.9-82. 28.4-124 3.0-162 180	8 . 2 . 1	88.55 94.36 95.81 97.72 97.81	130. 89. 65. 33. 28.	0 0 5
20 25 30 92 100	4.0 6.5 8.2 30.5 100	38.71 35.63 33.01 28.16 26.79	37.53 34.26 31.83 27.58 26.33	36.35 33.14 30.59 26.92 25.81	_	Water + Keto					
mo1	%	150		J				d Com		A	
		15°	20°	25°		Name		rmula			b.t.
0 0.1 0.1	1 2 2	73.50 68.12 64.98	72.75 67.33 64.26	71.98 66.74 63.47	71.21 66.02 62.68	Heptanone		H _{1 +} 0	149	52	
2 4.0	3 0	52.73 44.67 35.37 32.10	51.48 43.82 34.06 31.11	50.57 42.64 33.01 30.06	49.58 41.72 31.77	Methyl-4- pentanone-2	-	H _{1 2} 0	117	75.7	87.9
6. 8. 30.	2 5	29.28 26.40	28.23 25.61	27.05 25.22	28.75 - 24.60	Pentanedion	e_2.3 C₅	H ₈ 0 ₂	109	-	86
100		25,09	24.63	23.84	23.25	Isopropylid	ene C ₅	H ₈ 0	129.5	65.2	91.8
mol	%	35°	40°	45°	50°	Methyl-3- butene-3-one	-	н ₈ 0	99.5	-	83
0 0,1	1	70.37 65.37	69.52 64.78	68.76 64.32	67.93 63.67						
0,2 1,2 2,3 4,0 6,5 30,5	2 2 3 5	61,90 48.80 40.68 30.45 27.77 24.10 22.73	61.24 48.27 39.96 29.87 26.79 23.51 22.07	64.32 60.78 47.42 39.17 29.34 25.81 22.92 21.62	63.67 60.32 46.70 38.64 28.56						
I ——						!					

r				Time to the second			
Water + Ace	etylacetone ((C5H8O2)		Schukarew, 191	0		
Rothmund, 1	898			% capil	lary constant	% capil	lary const.
%	sat.t.	1/8	sat.t.		mg/mm		ng/mm
14.87 16.19 18.05 22.19 29.42	27.05 34.00 40.90 56.45 74.50	47.39 57.96 68.21 79.41 90.08	87.25 87.12 85.55 79.42 57.65	20.07 28.75 39.85 48.88	7.02 88° 6.92 6.95 7.01	60,42 69,47 80,00	6.95 6.76 6.47
32.65 39.68	78.57 84.30	93.14 95.81	44.25 21.65	%	cooling he	88°-20°	
Timmermans	s, 1911 85.1 Limits	of P (5-105	kg/cm²)	89.34 82.00 76.80 65.24 52.52	48.97 53.48 55.48 60.76 65.79	40.26 45.26 46.58 50.23 54.69	
dt/dp = _(,	21.91 13.30	7 3.66 7 5.56	62.20 64.23	
Schükarew,	1911	سن جن سن سند سند الله المهامين مند الدوم م		Water + 2,2-Di	alkoxy-ketone	es	
%	p	K	p	Lecat, 1949			
	91	.2°					
0 11.77 19.56	504 (89°) 637.0 638.4	51.60 59.22 74.14	647.6 649.2 648.0	2nd Comp. Name	Formula	b. t.	Az b. t.
24.12 39.14	642.2 648.0	80.08	646.0 550.4	Dimethoxy-3 butanone	C ₆ H _{1 2} O ₃	145	93-94
%	đ	%	d	Diethoxy-3	C 8H1 6O3	163.5	95-96
100 79.1 64.7	0.72365 .90793 .92098	.2° 25.1 15.7 0	0.94153 .94382 .96453	butanone Dipropoxy-3 butanone	C _{1 0} H _{2 0} O ₃	196-197	98.5
37.1	.93773			Dibutoxy-3 butanone	$C_{1\ 2}H_{2\ 4}O_{3}$	228-230	97~99
	τ.106	%	τ.106	Diisobutoxy-3	C _{1 2} H ₂₄ O ₃	214-215	98
		-100°		butanone			
15.69 25.15 37.12 50.00	822 812 860 813	64.76 79.10 100	857 973 1144	Dimethoxy-3 pentanone	C7H1403	162.5	96
						ر امار می امار امار می امار امار می امار امار	
			i				

Water + Ethylo	cellosolve ((C4H10O2)		Water +	Acetic	anhydride	(C4H608)	
Bublik and Kuc	hynka, 1956			Mishche	enko and	Cherbov,	1930		
i e	01 %	b.t.		mo]		р	p(1+1)	p ₂	p ₁
L	v			L	<u></u> ±V				
00.7	740 mm	20.0					30°		
99.7 96.6	99.4 95.2	99.9 98.2		0 4.00	$\frac{0}{2.19}$	$356.4 \\ 352.1$	$\frac{0}{12.3}$	-	356.4 339.8
83.9 81.6	89.8 89.0	98.2 9 8.4		6.92	4.82	344.6	25.1	-	339.8 319.5
73.0	86.4	98.8		11.38 18.49	$7.78 \\ 13.13$	337.2 323.6	$\frac{38.2}{61.0}$	_	299.0 262.6
56.2 43.8	82.6 77.6	101.0 103.4		26.98 43.81	21.64 38.52	303.5 246.7	97.6 171.9	- - -	205.9 74.8
	400 mm			50.00	50.00	208.3	208.3	18,10	
99.7	99.5	82.8		56.96 65.11	52.92 56.98	$\frac{190.7}{169.2}$	172.6 133.1	36.23	-
96.6	95.7	82.6		74.02 87.22	63.53 74.22	149.4 121.0	93.83 47.80	56.02 73.23	-
86.5 83.7 81.5	90.9 90.1	82.4 82.5		100	100	96	0	96	-
81.5 74.5	89.5 88.0	82.6 83.2		p ₁ = v	apour pr	essure of	water in	excess o	f (1+1)
73.2 47.0	87.5 80.2	83,4		l====					
47.0	200 mm	87.2		Marek,	1955				
98.6	97.7	66.5		ļ.	t		9		ļ
96.6 83.7	96.6 90.9	66.4 66.7					^L 1	L ₂	
81.4 78.1	90.3 89.5	66.8			0		5.98	97.4	14
74.4	88,4	66.9 67.4			18.2		11.95 22.20	97.	82
61.4 43.3	85.1 79.4	68.6 70.8		Į.	38.7		22.20	98.	
mol %	n _D	mol %	n _D						
	20°			Marek,	1956				
100,00	1,4079		1,3811		mol %		sat	+	
85.65	.4071	15.99 11.30	.3724	L ₂	1101 /b	L ₁	540		
70.20 64.38	.4061 .4050	7.40 4.30	.3634 .3520						
49.18	.4022 .3955	2.00 0.00	.3430 .3329	87.0		1.11	0		
31.00 Cellosolve (.002	88.8 90.1		2.34 4.79	18 38		
Water + 2-1	+ul+hianhan-	(C.U.OS)							
Water + 2-Ace	cyrturopnene	(C(n(U3)		Faust,	1912				
Johnson, 1947				mol	%	0°	d 18°	•	7 2. 5°
t		%			۔ مدعو سے سومی سرمی				
	L.	L ₂		0 50		1.1059 .0850	1.075	57	1.0179 0.9954
30	1.	.4 97.6	;	70		.0894	.06	89	1.0174
				75 85		.0904 .0804	.060	04	.0194
Water + Aceto	phenone (CaH	₈ 0)		100		0,9999	0.99	89 =======	0.9969
Bingham, 1907		- '	i !						
			İ						
C.S.T. = 220									

mol %	d	
	25°	40°
0	0.9965	0.9915
20	1.0615	1.0485
40	.0565	.0408
45	.0506	.0348
50	.0452	.0293
60	.0523	.0354
80	.0642	.0476
100	.0737	.0557

nol 🖇		η	
	0°	18°	73°
0	1240	900	490
35	1470	1100	595
50	1950	1410	670
60	4440	2180	830
70	5110	2710	925
75	5010	2740	910
85	4400	2310	7 55
00	1760	1100	410

Kovalenko,	Trifonov	and	Tissen.	1956

mol %		η
	25°	40°
0 20 40 45 50 60 80 100	894 2189 1852 1497 1193 1059 936 842	656 1484 1294 1104 921 835 735 693

Trifonov, 1926

Magnetic rotation for D line at 15° isotherms present 2 branches intersecting at 50 mol % (acetic acid) and corres = ponding to the maximum deviation of the additivity of 12.6 % .

The branch anhydride-acid is a straight line .

The branch acid-water is a curve .

Trifonov and Cherbov, 1929

mol %	н	mol %	ж
	13	7°	
100 84.74 68.65 50.00 45.99 30.13 17.08	0.1035 0.05758 0.02463 0 0.1395 0.5617 3.797	8.24 6.50 5.0 4.0 1.12 0.5	9.882 13.09 14.88 15.61 13.74 10.43

Water + Succinic anhydride ($C_4H_4\theta_3$)

van de Stadt, 1902

mo1 %	f.t.	mol %	f.t.
11.29 13.47 15.43 16.53 17.64 18.60 23.71 25.28 34.73 39.76	89.4 98.2 104.8 109.8 112.0 115.1 130.8 134.2 159.5	42.40 50.00 59.30 67.28 80.14 89.94 94.11 96.95 100.00	180.6 182.8(1+1) 174.4 166.7 153.3 138.6 128 117 118.8-119

Water + Phthalic anhydride ($C_8H_{+}\theta_3$)

van de Stadt, 1902

mol %	f.t.	mol %	f.t.
0.00036 0.0754 0.198 10.30 20.36 27.98 35.37 39.93 50.00 51.24	0 25 50 135.9 165.4 179.4 186.2 189.6 191.0 190.4	56.73 60.63 64.22 73.95 80.23 87.49 97.86 99.02 100.00 (1+1)	189.5 188.8 187.1 181.8 176.2 169.4 130.9 131

Water + Esters Lecat, 1949					Isoamyl- isobutyrate	C ₉ H _{1 8} O ₂	169.8	44	97.6
					Ethylvalerate	C7H1402	145.45	60	94.5
	2nd Comp.		Az		Methylisovalerate	C ₆ H _{1 2} O ₂	116,5	80.5	87.2
Name	Formula	b.t.	% 	b.t.	Ethylisovalerate	C7H1402	134.7	69.8	92.2
Ethylformate	C3H6O8	54.15	97	54.1	Propylisovalerate	CaH1602	155.7	54.8	96.2
Propylformate	$C_{\mu}H_{8}O_{2}$	80.85	96.4	71.9	Butylisovalerate	C ₉ H ₁₈ O ₂	177,6	37	98.0
Isopropylformate	$C_{\mu}H_{g}O_{g}$	68.8	97	65.0	Isobuty1-	C 9H1 802	171.2	42.0	97.7
Butylformate	C5H1002	106.8	85	83.8	isovalerate Isoamyl-	C 11 0	150 5	A. A	
Isobutylformate	C5H1002	98.2	91.8	80.4	isovalerate	C ₁₀ H ₂₀ O ₂	152,7	25.9	98.8
Amylformate	C6H12O2	132	71.6	91.6	Methylcaproate	C7H1402	149.8	59	95.3
Isoamylformate	C6H12O2	123.8	77.7	89.7	Ethylcaproate	C8H1602	167.7	45	97.4
Methylacetate	CaH602	56.95	96.7	56.4	Ethylheptanoate	C 9H1 802	188.7	28	98.5
Ethylacetate	$C_{\mu}H_{\beta}O_{2}$	77.05	91.8	70.4	X				
Propylacetate	C5H1002	101.6	86.8	82.2	Methylcaprylate	C ₉ H ₁₈ O ₂	192.9	26	98.8
Isopropylacetate	C5H1002	89.5	91	74.35	Ethylcaprylate	C ₁₀ H ₂₀ O ₂	208,35	18	99 .2 5
Butylacetate	C ₆ H _{1 2} O ₂	126.0	72.0	90.2	Methylpelargonate		213,8	15	99.45
sec. Butylacetate	$C_6H_{12}O_2$	112.0	86.6	86.6	Ethylpelargonate		227	12	99.6
Isobutylacetate	C ₆ H ₁₂ O ₂	117.4	80.5	87.45	Methylacrylate	C ₄ H ₆ O ₂	80	92.8	71
Amylacetate	C7H1402	142.1	64.1	94.05	Methylcarbonate	C ₃ H ₆ O ₃	90.25	89	77.5
Isoamylacetate	C7H1402	148.8	59	95.2	Ethylcarbonate	C ₅ H _{1 O} O ₃	126.5	70	91
Methylpropionate	$C_{4}H_{8}O_{2}$	79.95	96.1	71.4	Isobutylcarbonate		190.3	26	98.6
Ethy lpropionate	C5H10O2	99.1	86.8	82.2	Isoamylcarbonate		232.2	9	99.75
Propylpropionate	C ₆ H ₁₂ O ₂	123,0	7 3	89.3	Methylfumarate	C ₆ H ₈ O ₄	193.25	25. 5	99.85
Isopropy1-	C6H12O2	110,3	80.1	85.2	Ethylmaleate	C BH1 204	223.3	11.8	99.65
propionate	C 11 0	146.0	50	0.4.0	Phenylacetate	C8H8O2	195.7	24.9	98,9
Butylpropionate Isobutyl=	C7H1402	146.8	59	94.8	Benzylformate	C ₈ H ₈ O ₂	203,0	20	99.2
propionate	C7H1 402	138.0	65.25	92.95	Benzylacetate	C ₉ H _{1 0} O ₂	215.0	12.2	99.6
Isoamy1-	C ₈ H ₁₆ O ₂	160.7	48	96.4	Bornylacetate	C _{1 B} H _{2 O} O ₂	227.6	12.7	99.62
propionate	C 11 A	100 (5			Methylbenzoate Ethylbenzoate	С _в Н _в О ₂ С _в Н _{1 о} О ₂	199.4 212.5	20.8 16.0	99.08
Methylbutyrate Ethylbutyrate	C ₅ H ₁₀ O ₂	102.65	86	82.7	Propylbenzoate	C _{1 0} H _{1 2} O ₂	230.85	8.8	99.4 99.7
	C H 202	121.5	7 5	88.2	Butylbenzoate	C _{1 1} H _{1 1} O ₂	249.0	5.8	99.88
	C7H1402	143.7	63.6	94.1	Isobutylbenzoate		241.9	6.2	99.82
	C ₈ H ₁₆ O ₂	166.4	46	97.2	Isoamylbenzoate	C _{1 2} H _{1 6} O ₂	262.0	3.5	99.9
	C ₈ H ₁₆ O ₂	156.9	54	96.3		C _{1 0} H _{1 2} O ₂	228.75		
Isoamylbutyrate Methylisobutyrate	C ₅ H _{1 8} O ₂ C ₅ H _{1 0} O ₂	182.05 92.5	36.5 91	98.05 77.9	Ethylphenyl- acetate	C1 0H1 2U2	220,75	8.7	99.73
Ethylisobutyrate	C6H12O2	110,1	82	85.2	Methylcinnamate	C10H1002	261.9	4.5	99.9
Propylisobutyrate	C7H1402	134.0	69.2	92:15	Ethylcinnamate	C ₁₁ H ₁₂ O ₂	272.0	3	99.93
Isopropy1-	C7H1402	120.8	77	88.4	Methylphthalate	C 8H1 0O4	283,2	2.5	99.95
isobutyrate	C.U. A	140 /	50.5		Ethylphthalate	C _{1 O} H _{1 1} O ₁	298,5	2	99.98
Isobutyl- isobutyrate	C ₈ H ₁₆ O ₂	148.6	59.5	95.0	ر دائية مين هيئة هيئة شروعي شد التي الكرائية الله الكال الكرائية الله الكرائية الله الكرائية الكرائية الكرائية و يوني في يوني مين المو التي يون في الكرائية الله الله الله الله الله الله الله الل				

Water + Methyl	acetate (C ₃ H	602)					
Marshall, 1906	ς.			Richards an	d Chadwell, 1	925	
برحرب بير وه الموجر جروب حواجر جرجات الم	·		ومهانيه مدمد مرامه مدمد مدمد مدمد	%	<u>đ</u>	<u> </u>	<u>d</u>
mol %	757.6 mm	56 93	760 mm 56.98	6.544 9.257 13.084	1.00055 1.00139 1.00244	0° 19.449 100	1.00318 0.93347
85.1 65.7 65.6 65.3	- - -	56.43 56.78 57.03	56.48 56.83 57.08	8	π	Я	π
64.7 64.1 63.4 58.8 53.3 17.20 10.62	57.21 57.20 57.21	57.07 57.11 57.16 57.17 57.17	57.12 57.16 57.21 57.22 57.22 57.30 57.29 57.30	0 5.43 10.16 13.86 14.84	19. 43.25 41.58 40.34 40.12 40.27	17.46 17.80 20.56 20.98	40.44 40.20 40.64 41.11 38.48
9.59 9.30 9.14 9.01	57.23 57.24 57.26	-	57.32 57.33 57.35	Chadwell, 1	927		
8.75 8.38 7.61	57.31 57.39	-	57.40 5 7. 48	mol %	đ	mol %	d
6.82 6.01 5.20 4.37 3.53 2.67 1.79 0.91	57.75 58.38 59.28 60.65 62.7 65.6 69.8 75.8 86.8 99.9	-	57.84 58.47 59.37 60.74 62.8 65.7 69.9 75.9 86.9 100.0	0.000 3.122 4.215 7.113 9.010 11.077 13.793	25° 0.99707 .99792 .99824 .99901 .99947 .99997	14.295 16.259 73.329 94.975 96.752 98.270	1.00045 .00060 0.93823 .93532 .93250 .93004 .92740
mol %	p	p ₂	P ₁	mol %	η	mol %	η
100 90 85 75 65 9.2 5.0	760.5 776 774 774 765 754 754 660 129	760.5 698 678 654 633 633 535	0 78 96 111 121 121 121 124 129	0.000 3.122 4.215 7.113 9.010 11.077 13.793	894.9 950.5 971.1 1021.4 1050.4 1086.9 1118.1	14.295 16.259 73.329 94.975 96.752 98.270	1127.4 1145.8 431.1 408.4 387.9 372.0 359.4
	-			Chadwell and	l Asnes, 1930		
Rabinovich, Fe	dorov and al.,	1955 (fi	ig.)	× ×	d	η	(water=1)
t	L ₁	mol %		0.0 3.8 5.7	357 1.001	7 1.000 6 .099	00 94
0 20 40 60 89 100 107 (C.S	.T.) 23	78 73 67 60 51 39 23) ;	9.7 9.0 13.0 14.4 20.7 23.1 98.9 100.0	148 .003 147 .005 117 .006 176 .008 17 .009	9 .219 5 .302 0 .324 0 .406 0 .423	93 24 45 55 36 41

W E	-11	/ C N O \		1			 -
	thyl acetate	(C ₄ H ₈ U ₂)		Wade, 1905			
Marston,	1853						
17.5°	7.88 % and 9	7.16 % (Լղ	and L ₂)	t 	d	t	d
	المن الذا الله على من من من الما الذا الله على الله الله على الله على الله الله الله الله الله الله الله ال			25 23	0.9122 S	at.sol. ₂₀	0.9113 .9111
Merriman,	1913			25 23 22 21	.9119 .9116 .9115	17.8 15.7	.9106
	و الدوات الدوات الدوات الدوات الدوات الدوات						
Az P	×	b.t.	b.t. (100%)				
				Chadwell,	1907		
25.0 50.0 78.5	96.04 96.04 95.70	10 05	12.75 21.47	%	d	76	d
82.2	95.50	18.45 19.38 31.35 34.82 42.55 49.04	22.38 34.93			25°	+L ₂)
150.0 176.0	94.61 94.40	34.82	3 8. 61	0.000 0.676	0.99707 .99704		
250.0 329.8	93.72 93.15	49.06	46.87 53.84	0.892 1.815	.99 7 02 .99698	97.451 98.342 99. 110 100.000	.89745 .89610
420.0 446.2	92.76 92.72		60.27	1.815 3.041 3.284	.99692 .99690	100.000	.89451
606.0 613.8	92.09 92.02	56.44 64.33 64.60	61.87 70.50 70.82 76.55				
745.0 760.0	91.65 91.53	69.83	76.55 77.15	II.			
875.0	91.24 91.14	64,33 64,60 69,83 70,38 74,38 75,23 77,66 82,95 88,49 89,08	81.51	Merriman, 1	1913		Ì
903.5 984.3	90.99	77.66	82.45 85.19	t		d t	
1177.9 1415.0	90.54 90.10	82.95 88.49	90.99 97.16		L ₁		L ₂
1441.3	90.06	89.08	97.80	0.0 6.1	1.0035 s .0020		0.9281
%	sat.t.	%	sat.t.	11.5	.0009	6.8 7.8	.9200 .9190
				14.5 16.4 17.05	.0005 .0002	9.6 10.3 13.3	.9173 .9169
97.64 97.49 97.29	1.6 7.1 13.3	96 .2 8 96.10	36 .7 39.6	18.0	.0001	15.1	.9133 .9116
97.29 97.10	17.7	96.06 95.78	40.7 46.0	20.0 20.4	0.999 7 .9998	20.0 25.1	.90 72 .9030
97.04 96.74	20.0 25.9 33.4	95.38 95.10	53.1 58.0	1 20.65	.9996 .9996	25.1 31.0 38.1	. 8990 . 8951
96.40	33.4	70,110	20.0	22.0 22.05 24.3	.9995 .9991	00.1	. 6931
10.08	0	7 50	25	24.3 26.1 32.5	.9989		
9.44 8.82	5	7.50 7.17	25 30	40.3	. 9985 . 99 7 9		
8.82 8.30 7.85	10 15	6.90 6.65	35 40				
7.85	20	~~~~					
	ر جروبی اساس نم میاهد اماد سوس م داخه ^{ام}			Chadwell,	1907		
Griswold,	Chu and Wins	auer, 1949		%	77)	%	η
 mo	1 %	b. t.	p ₂ p ₁			25 °	
L	V		r* P1	0.000 0.676	894.9 909.5	4.809 6.170	1004.3 1035.7
94.0	84.9	74.1	600 277	0.892 1.815	912.9 935.4	97.541	449.5
95.8 97.6	86.9 92.2	74.6	680 277 692 285	3.041 3.284	965.2	98.342 99.110	439.5 431.2
77.0	74.4	75.8	722 297 	3,204	967.8	100.000	424.4
į į							
L				<u> </u>			

Water + A	myl valerate (C ₁₀ H ₂₀ O ₂)		Water + Esiers					
Pierre, 18	872			Lecat, 1949					
Ag . 35 g	V (L ₁ + L ₂	,			2nd Comp			Az	
AZ : 00 %	- (L ₁ , L ₂	, :====================================	الله التحريب فراد الله الله في الله الله الله الله الله الله الله الل	Name	Formula		%	b.t.	Dt
	حم المدة عنياء الحم الحد الله الحد عليه في المد الميواني فيواني	و جيدهند فاي هيم داي جين فيي رسد فيو جي حيد .		Methoxyglycol	C _x H _{1 0} O ₃	144.6	48.5	97.0	+3.9
Water + Etl	hyl palmitate ((C ₁₈ H ₃₆ O ₂)		acetate	-3-100				
Neirinckx,	1953			Ethoxyglycol acetate	C6H12O3	156.8	45	97.4	-
mol %	f.t.	mol %	f.t.	'''	$C_8H_1_6O_3$	171.75	40	97.8	-
100	22.9	5 2	20	acetate					
98 50	22.5 22.5	2 0	8	Ethoxydiethylen glycol acetate	е С _В Н ₁₆ О ₄	218.5	24	99.2	_
12	22.5 ===========			Butoxydiethylen	e C ₁₀ H ₂₀ O ₄	245.3	8	99.8	-
			الأعيد المداوي في المواقع في شواهم الوائم المواقع المواقع	glycol acetate					
Water + Etl	hylene diacetir	$1 (C_6H_{10}O_4$)		ده کنید امار دارد کار کار دارد کار دار با دارد کار				====:
Schwers, 19	911								
	d	t	d	Water + Ethyl	carbonate	(C5H100	3)		!
t			u	Harkins and Hu	mnhrov 10	16			
74.1	100	•	1 0/500	naikins and nu	ipiniey, 19	10			
14.1 34.3	1.10885 .08807	54.5 73.7	1.06538 .04426	σ (interfacial) = 13.00	25°			
	81.55	55 %							
16.2 34.0	1.09570 .07788	61.3 74.1	1.04940 .03520		`				
52.9	.05825			Water + Methyl	oxalate (C ₄ H ₆ O ₄)			
21.7	18.26 1.02402	43 % 61,6	1 00145	Skrabal, 1917					
33.0 53.2	.01856 .00690	71.5	1.00145 0.994 7 6						
	13,60	73 %			f.t.	%		f.t.	
19.4	1.01869	61.1	0.99727		53.5 50.5	16.7 15.8		48.0	
33.6 52.3	.01261 .00260	73.4	.98918	93.3	48.0 48.0	$13.0 \\ 12.5$		44.5 41.5	
	9,81	08 %		64.4	48.0	10,7		38.0 36.0	
19.5 33.2	1.01306 1.00787	$\frac{61.5}{71.9}$	0.99305 .98668	36.3	48.0 48.0	$\frac{9.1}{6.3}$		37.0 15.5	
52.5	0.99838		,70008	23.1	48.0 48.0 48.0	6.6 5.0		21.5 9.5 1.5	
18.3	4,838 1,00599		0.000=0		48.0 48.0	4.1		1.5	
33.6 53.5	1.00399 1.00118 0.99219	60.3 71.2	0.98873 .98220	ر بین با شهر امین برد. اکثر امین امین امین امین امین امین امین امین		ر سم میں میں اسے سم اس سام سان ۔ یہ سم اسمیدی اس اس سم سام اس مار یہ سم اسمید میں اسام سام میں اسام اس			
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			11						

				T
Water + Methyl metha	crylate (C ₄	H ₆ U ₂)		Water + 4,6-Dimethyl-1,2-pyrone ($C_7H_8O_2$)
Woods, 1947				Wiley and Smith, 1951
p	b.t.			t %
	1.4 %			L ₁ L ₂
200 760	49 86-92	!		59.7 32.5 32.5 62.5 26 40 65 25 44
				[67.5 24.5 46
Water + Chloroesters	5			70 24.5 48 72.5 25 49 75 25.5 49.5 77.5 26 49.5
Lecat, 1949				80 27 47.5 82.5 28 45
2nd Comp.		Az		85 31 40 86.3 34.5 34.5
Name Formula	b.t.	K	b.t.	
Methyl- $C_3H_5O_2C1$ chloracetate	131.4	63.85	92.7	Water + Methyl sulfate (C ₂ H ₆ O ₄ S)
Ethyl- C4H702C1	143.5	54.88	95.2	Lecat, 1949
chloroaceta te				% b.t.
Propyl- C ₅ H ₉ O ₂ Cl chloroacetate	162.3	42.5	97.1	0 100 27 98.6 Az
Butyl- C ₆ H ₁₁ O ₂ Cl chloroacetate	181.9	24.53	98.12	100 189,1
Isobutyl- $C_6H_{11}O_2Cl$ chloroacetate	174.4	35.82	97.8	Perkin, 1886
Isoamyl- C ₇ H ₁₃ O ₂ Cl chloroacetate	195.2	22.24	98,95	mol % d 15° 20° 25°
				0 0.99913 0.99823 0.99707 50 1.33227 1.3252 1.31997
Water + Methyl dimet		e (C ₈ H _{1 2}	0 ₆)	50 mol % 22.8° (α) magn. = 0.7602
%	d	(α) D		-
,		D		· <mark> </mark>
100 19,9988 10,0315 0	20° 1.1751 - 0.9982	+87 78.71 78.45	. ت قد ند نو ند اند ن نو نو اند ا	-
_				1

WATER + HYDROCYANIC ACID

									
				Onikh	tina and	Frost 1	936		
LIX. WATER +	NITROGEN DE	RIVATIVES		[4			
				b.t		L ×	, V	p	
Water + Hydr	ocyanic acid	(HCN)		 					
				25 27	7	99.8 98.3	99.6 99 .3	771 - 771 -	
Shirado, 192	!7 			27.	3	98.3	99.2	759	8
%	р	P2	P ₁	28. 28.		95.8 93.0	98.0 98.1	769 772	Î
	 18°			29. 30.		91.4 85.2	98.3 97.7	759 . 769 .	
4.996	129.7	114.4	15.3	32.	6	72.8	98.0 97.4	759. 769.	5
9.703 14.488	228.1 300.8	214.3 288.3	13.8 12.5	33. 35.	5	67.6 49.2	94.9	776	8
19.675	352.0	338.1	13,9	37. 39.		36.3 24.5	96.5 96.9	776. 757.	
20.054 26.90	355.7 390.8	346.9 3 7 5.5	8.8 15.3	41.	1	22.9 16.7	94.6	764.	4
33.01 47.64	$\frac{411.9}{434.1}$	396.4 416.7	15.5 17.4	45. 60.		8.6	95 . 7 90 . 6	752. 744.	
47.93 49.20	435.6	415.2	20.4	76. 8 5.		4.1 2.5	75.3 54.9	756. 756.	
49.20 60.23	433.0 445.4	420.2 435.2	12.8 10.2	92.	2	1.3	38.3	75 7 .	2
60.76 (2.67	446.3 453.3	437.4 441.3	8.9 12.0	95. 98.		0.8 0.4	30.2 17.1	75 7 . 764 .	
70.93	458.0	446.7	11.3	Í <u></u>					
79.54 80.18	476.0 478.4	467.1 468.9	8.9 9.5]					
88.55 89.64	505.1 510.2	497.9 (492.0)	7.2 (18,2)	Coates	and Har	tshorne,	1931		_
100,00 100,00	569. 7 566. 2	(525.2)	(44.5)	mol %	ft	E	mol %	ft	E
100.00				0.81	- 0.9	-	28.99	-15 7	_
				1.27	- 1.4 - 3.5	-23.31	31.76 36.82	-15 9 -16 0	-23.40 -23.43
				3.53	- 38	-	50. 96	-16.4	-23.34
Fredenhagen a	nd Wellmann,	1932		7.76 9.03	- 7.7 - 9.4 - 9.9	-23.43	59.24 66.96	-17.3 -19.3	-23.36 -23.36
mol %	P2	P1	P	9.89 13. 87	- 9.9 -12.4	-	70.4 73.0	-21.1 -22.6	-23.44 -23.36
	18°			14.25 19.36	-12.8 -14.45	-23.41	73.7 79.7	-22.9	-23.39 -23.45
0	10	15.5	15.5	23.87	-15.3	-23.40	88.9	-22.5 -19.4	-23.4
0 3.4	114.4	15.5 15.14	15.5 129.5	24.11 24.61	-15.3 -15.4	-23.41	95.9 98.5		23.5 - 25.0 24.5 - 26.0
6.5 10.1	214.0 287. 0	14.86 14.60	288.8 301.6	26.29 28.03	-15.5 -15.7	-23.43 -23.41	100	-13.5	-
14.0	341.0	14.35	355.3			20.41			
14.3 19. 7	$\substack{344.0\\380.0}$	14.33 14.11	358.3 394.1						
24.7 37.8	396.4 419.0	14.0 13. 7 5 13.74	410.4 432.7	Peiker	and Coff	fin, 1933	;		1
$\frac{38.1}{39.3}$	419.3 419.4	13.72	433.0 433.1	mol %	f.t.	mol %	f.t.	mol %	f,t.
50.2 50.7	430.0 430.5	13.39 13.37	443.3 443.8	100	-13.5	60	-17.5	20	-14.5
60.5 62.0	430.5 443.7 446.2	12.92 12.84	456,6 459.0	90	-19	50	-16.5	10	-10 0
72.1	466.0	11.70	477.7	80 70	-22.5 -21	40 30	-16= -16	0	U
73.1 83.8	468.9 49 7. 9	11.55 9.0	480.4 506.9	====					
100	566.2	-	566.2		100	_			
					817 - 182				
				5	đ	%	đ	×	<u> </u>
				1	0.9988	7	0° 0.9869	12	0.9716
				2	. 9974	8	. 9840	13	. 9581
				3 4 .	. 9958 . 9940	9 1 0	. 9811 . 9 7 81	14 15	. 9645 . 9608
				5	. 9919	11	.9749	16	. 9570
				, ,	. 9895				

Grup and Bulbirt, 1918 0.700 90.50 22° 2 1° 20° 19° 18° 17° 700 90.50 90.9 90				10° 9°	8° 7°	6° 5°
CT	Gray and Hulbirt, 1918	و هند های در حدر میں تنایز نال بال در دی دی دی سو سے الدر دی ضد اسد الدر سے الدر اس اس عور الدر الدر الدر الدر	.708	99.2 99.6		
0.602 99.7 99.8 99.8 99.9 99.7 99.5 99.9 99.3 7.72 98.1 98.5 99.9 99.3 79.0 98.5 98.7 99.1 99.5 99.9 99.3 79.7 98.1 98.5 98.9 99.3 99.7 99.1 99.5 99.8 98.7 99.1 99.5 99.9 99.3 724 94.3 94.1 94.5 95.6 96.0 97.5 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 97.5 97.9 98.3 98.7 7.2 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 77.0 98.1 98.5 98.9 99.3 97.7 98.1 99.5 98.3 98.7 7.7 98.1 7.7 98.1 97.5 98.1 98.5 98.9 99.3 77.2 98.1 98.5 98.9 99.3 77.2 97.0 98.1 98.5 98.9 99.8 99.8 99.8 7.7 98.1 98.5 98.9 99.3 77.2 97.0 98.1 98.5 98.9 99.8 99.8 99.8 77.0 98.1 98.5 98.9 99.8 99.8 99.8 77.0 98.1 99.5 99.8 98.3 98.7 7.7 98.1 97.0 98.1 99.5 99.8 98.3 98.7 7.7 98.1 97.0 98.1 99.5 99.9 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.9 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 99.8 91.0 99.5 91.0 91.0 91.0 91.0 91.0 91.0 91.0 91.0			.710 .712	98 0 98 4	98.8 99.3	
.700 99.1 99.6 100 33.01 9155 80.18 .7574 .702 98.5 98.9 99.4 99.8 99.6 100 .706 97.3 97.8 98.2 98.6 99.0 99.4 .708 96.7 97.1 97.6 98.0 98.4 98.8 .710 96.1 96.5 97.0 97.4 97.8 98.2 .712 95.5 95.9 96.4 96.8 97.2 97.6 .714 95.0 95.3 95.8 96.2 96.6 97.0 .716 94.4 94.7 95.2 95.6 96.0 96.4 .718 93.8 94.1 94.6 95.0 95.4 95.8 .722 92.6 93.0 93.4 93.8 94.2 94.5 .722 92.6 93.0 93.4 93.8 94.2 94.5 .724 92.0 92.4 92.8 93.2 93.6 93.0 .728 90.9 91.2 91.6 92.0 92.4 92.8 93.2 93.6 93.0 .728 90.9 91.2 91.6 92.0 92.4 92.8 93.2 93.6 93.0 93.3 .730 90.3 90.6 91.0 91.4 91.8 92.2 .734 89.1 89.4 89.8 89.2 89.6 90.0 90.4 14.58 .9718 60.76 .8259 .738 87.9 88.2 88.6 89.0 89.4 89.8 89.2 90.2 90.6 91.0 10.04 9824 60.23 .8279 .738 87.9 88.2 88.6 89.0 89.4 89.8 89.2 19.70 .9579 69.50 .7942 .740 87.3 87.6 88.0 88.4 88.8 89.2 89.6 90.0 90.4 14.58 .9718 60.76 .8259 .7942 .744 86.7 87.0 87.4 87.8 88.2 88.6 89.0 89.4 89.8 89.2 20.9 .9565 70.93 .7914 .742 86.7 87.0 87.4 87.8 88.2 88.6 89.0 89.4 89.8 89.2 20.9 .9565 70.93 .7914 .744 86.1 86.4 86.8 87.2 87.6 88.0 39.4 89.8 87.2 87.6 88.0 88.4 88.8 89.2 20.9 .9565 70.93 .7914 .742 86.7 87.0 87.4 87.8 88.2 88.6 89.0 89.4 89.8 19.70 .9579 69.50 .7942 .744 86.1 86.4 86.8 87.2 87.6 88.0 33.01 .9154 80.18 .7572 .752 83.6 84.0 84.4 84.8 85.2 85.6 86.0 86.4 86.8 87.2 87.6 88.0 .39.26 .8975 88.55 .7279 .748 84.9 85.2 85.6 86.0 86.4 86.8 87.0 87.4 87.8 88.2 88.6 89.0 89.4 89.8 .20.29 .9565 70.93 .7914 .742 86.7 87.0 87.4 87.8 88.2 88.6 88.0 83.4 88.8 89.2 20.29 .9565 70.93 .7914 .742 86.7 87.0 87.4 87.8 88.2 88.6 88.0 83.4 88.8 89.2 20.29 .9565 70.93 .7914 .742 .744 86.1 86.4 86.8 87.2 87.6 88.0 33.01 .9154 80.18 .7572 .744 86.1 86.4 86.8 87.2 87.6 88.0 39.2 87.6 88.0 39.2 87.5 88.55 .7279 .748 84.9 85.2 85.6 86.0 86.4 86.8 87.0 87.4 87.8 88.2 88.6 87.0 87.4 87.8 88.2 88.6 89.0 89.4 89.8 89.2 89.2 99.2 99.5 88.5 88.5 88.0 89.2 99.2 99.5 88.5 88.5 88.5 88.0 89.2 99.2 99.5 88.5 88.5 88.0 99.2 99.5 88.5 88.5 88.0 99.2 99.5 88.5 88.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0	22° 21° 0.690 99.7692 99.1 99.5 .694 98.5 98.9 .696 97.9 98.3 .698 97.3 97.7 .700 96.7 96.1 96.5 .704 95.5 95.9 .706 94.9 95.3 .708 94.9 95.3 .708 94.3 94.7 .710 93.7 94.1 .712 93.1 93.5 .714 92.6 93.0 .716 92.0 92.4 .718 91.4 91.8 .720 90.8 91.2 .722 90.2 90.6 .724 89.6 90.0 .726 89.0 89.4 .738 88.5 88.9 .730 87.9 88.3 .732 87.3 87.7 .734 86.7 87.1 .736 86.2 86.5 .738 85.6 86.0 .740 85.0 85.4 .742 84.4 84.8 .744 83.8 84.2 .744 83.8 84.2 .744 83.8 84.2 .744 83.8 84.2 .744 83.8 84.2 .744 83.8 84.2 .745 82.7 83.1 .750 82.1 82.5 .752 81.6 82.0 .754 81.0 81.4 .756 80.4 80.8	99.3 99.7	712 714 716 718 720 722 724 726 730 732 734 736 738 740 742 744 746 748 750 752 754 756 	98.0 98.4 97.4 97.8 96.7 97.2 96.1 96.6 95.5 96.0 94.9 95.3 94.3 94.7 93.7 94.1 93.1 93.5 92.5 92.9 91.3 91.7 90.7 91.7 90.0 90.5 89.5 89.9 88.3 88.7 87.7 88.1 87.1 87.5 86.5 86.9 85.3 85.3 85.3 85.3 85.3 85.3 85.3 85.1	98.8 99.3 98.2 98.7 97.6 98.1 97.0 97.5 96.4 96.9 95.8 96.2 95.1 95.6 94.5 95.0 93.9 94.3 93.3 93.7 92.7 93.1 92.1 92.5 91.5 91.9 90.3 90.7 89.7 90.1 89.1 89.5 88.5 88.9 87.9 88.3 87.3 87.7 86.1 86.5 85.5 85.9	99.1 99.6 98.5 99.0 97.9 98.4 97.3 97.8 96.6 97.1 96.0 96.5 95.4 95.9 94.7 95.3 94.1 94.7 93.5 94.0 92.9 93.4 92.3 92.8 91.7 92.2 91.1 91.6 90.5 91.0 89.9 90.4 89.3 89.8 88.7 89.1 88.1 88.5 87.5 87.9 86.9 87.3 86.3 86.7
.720 93.2 93.6 94.0 94.4 94.8 95.2 7.724 92.0 92.4 92.8 93.2 93.6 93.9 93.2 93.6 93.9 93.2 93.6 93.9 93.2 93.6 93.9 93.2 93.6 93.0 93.3 90.6 91.0 91.4 91.8 92.2 92.6 93.0 92.4 92.8 90.9 91.2 91.6 92.0 92.4 92.8 90.9 91.2 91.6 92.0 92.4 92.8 92.2 92.6 93.0 93.3 90.6 91.0 91.4 91.8 92.2 92.6 93.0 93.3 90.6 91.0 91.4 91.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 93.0 92.4 92.8 92.2 92.6 92.7 98.27 92.7 98.27 92.7 98.27 92.7 92.7 92.7 92.7 92.7 92.7 92.7 9	.700 99.1 99.6 10 .702 98.5 98.9 9 .704 97.9 98.4 9 .706 97.3 97.8 9 .708 96.7 97.1 9 .710 96.1 96.5 95.9 9 .714 95.0 95.3 9 .716 94.4 94.7 9 .718 93.8 94.1 9	00	33.01 39.26 46.01 47.68	.9155 .8976 .8747 .8648	80.18 88.55 89.64 100.00	.7574 .7282 .7258
.727	.722 92.6 93.0 9	94.0 94.4 94.8 95.2 93.4 93.8 94.2 94.5				
.730 90.9 91.2 91.6 92.0 92.4 92.8 5.052 0.9914 52.00 0.8506 97.32 89.7 90.0 90.4 90.8 91.2 91.6 9.770 9827 55.37 8416 97.34 89.1 89.4 89.8 90.2 90.6 91.0 10.04 9824 60.23 8279 97.38 87.9 88.2 88.6 89.0 89.4 89.8 19.70 9579 69.50 7942 97.38 87.3 87.6 88.6 88.0 88.4 88.8 89.2 20.29 9565 70.93 7914 97.3 97.3 87.3 87.6 88.0 88.4 88.8 89.2 20.29 9565 70.93 7914 97.3 97.3 97.3 87.3 87.6 88.0 88.4 88.8 89.2 20.29 9565 70.93 7914 97.3 97.3 97.3 97.3 97.3 97.3 97.3 97.3	.726 91.4 91.8 9	92.2 92.6 93.0 93.3	<u>-</u>			·
ļ	.730 90.3 90.6 9 .732 89.7 90.0 9 .734 89.1 89.4 89.1 .736 88.6 88.8 8 .738 87.9 88.2 8 .740 87.3 87.0 8 .742 86.7 87.0 8 .744 86.1 86.4 8 .746 85.5 85.8 84.0 .750 84.3 84.6 8 .750 84.3 84.6 8 .752 83.6 84.0 8 .754 83.1 83.5 8	91.0 91.4 91.8 92.2 99.4 90.8 91.2 91.6 889.8 90.2 90.6 91.0 90.4 88.6 89.0 89.4 89.8 88.0 88.4 88.8 89.2 87.4 87.8 88.2 88.6 86.2 86.6 87.0 87.4 86.8 85.0 85.4 85.8 86.2 86.4 86.8 87.2 87.6 88.0 86.4 86.8 87.2 87.6 88.0 86.4 86.8 85.6 86.0 86.4 86.8 85.6 86.0 86.4 86.8 85.6 86.0 85.4 86.2 86.6 87.0 87.4 86.8 85.6 86.0 85.4 86.8 86.2 86.4 86.8 85.6 85.6 85.6 85.6 85.6 85.6 85.6	9.770 10.04 14.58 19.70 20.29 26.90 33.01 39.26 46.01	.9827 .9824 .9718 .9579 .9565 .9363 .9154 .8975 .8745	55.37 60.23 60.76 69.50 70.93 79.54 80.18 88.55	.8416 .8279 .8259 .7942 .7914 .7587 .7572 .7279

Walker and Marvin, 1926		Opikhtina and F	Frost, 1936			
d _t %		78	d	%		d
0.682	100.0 99.7 99.4 99.1 98.8 98.5	3.30 7.20 11.43 22.30 30.30 34.00	0.9970 .9924 .9863 .9604 .9444 .9281	40.07 51.35 63.00 75.57 84.88 100.00		9.9051 .8780 .8351 .7989 .7632 .721
.685	85.297.4185.297.4185.2963.074185.07480.074	30,30 34,00 Opikhtina and H % 3,30 7,20 11,43 22,30 30,30 34,00 Bussy and Buign % 0 50 100 Water + Nitrile	1833 1819 1732 1313 1070 1000 net, 1867 U 18.5° 1 0.83 0.58: S 2nd Com Formula C ₂ H ₃ N C ₃ H ₅ N C ₄ H ₇ N C ₃ H ₅ N C ₄ H ₇ N C ₃ H ₃ N	84,88 100,00 	Q mix	.7632 .721

	Othmer and Josefowitz, 1947
Water + Acetonitrile (C_2H_3N)	b.t. mol %
Benjamin, 1932	760 mm
mol % p mol % p	81.5 100.0 100.0 79.2 96.0 87.9 78.8 95.0 85.1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	77.9 91.4 83.5 77.1 88.0 79.5 76.3 79.5 74.0 76.0 72.6 72.6 Az
Vierk, 1950	76.3 59.7 69.3 78.2 34.9 64.5 78.4 27.9 62.7 79.3 18.8 58.5 80.9 9.9 55.0 85.2 3.9 44.7 90.1 1.5 32.0 91.7 0.6 27.9
mol % p20° 30° 40° 50° 60°	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
0 17.5 31.8 55.3 92.5 149.4 6 61.5 97.5 152.1 226.8 319.6	100.0 0.0 0.0 300 mm
0 17.5 31.8 55.3 92.5 149.4 61.5 97.5 152.1 226.8 319.6 61.5 97.5 152.1 226.8 319.6 61.5 97.5 152.1 226.8 319.6 61.5 97.5 152.1 226.8 319.6 61.5 97.5 152.1 226.8 319.6 61.5 97.5 152.1 226.8 319.6 97.5 173.6 117.0 181.9 270.1 399.9 97.5 173.6 117.0 181.9 270.1 399.9 97.5 174.0 118.3 184.1 274.3 405.8 97.4 4119.5 185.8 278.4 410.0 97.5 174.8 120.0 186.0 282.0 416.1 97.5 97.5 119.8 186.0 282.0 416.1 97.5 97.5 119.8 186.0 284.3 400.6 97.5 97.5 119.2 186.1 276.0 388.7 97.5 119.2 186.1 276.0 388.7 97.5 118.5 181.8 271.7 376.3 100 70.9 111.8 170.8 253.9 368.0	54.4 100.0 100.0 53.2 99.0 95.3 52.3 98.0 91.4 51.6 91.4 83.5 51.2 86.0 80.8 51.1 70.0 77.2 51.4 52.0 74.6 51.7 31.1 73.2 54.0 11.8 68.6 64.7 3.0 42.0
mol % p P ₁ p ₂	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
30° 30° 7 101.0 28.3 72.7 17 115.0 26.5 88.5 44 119.0 24.2 94.8 65 120.0 24.0 96.0 87 119.4 20.3 91.9 92 119.0 15.5 103.5	150 mm 36.7 100.0 100.0 36.6 98.0 95.5 36.0 95.5 91.0 34.6 90.0 86.0 34.1 77.2 83.5 34.5 51.3 81.0 36.7 16.8 73.2 44.8 5.2 50.7 58.7 0.3 6.4 60.2 0.0 0.0 Az : 10 mm -12° 95 mol \$
19 73.2 11.2 62.0 35 74.2 10.5 63.7	Maslan and Stoddard Jr., 1956
65 74.7 10.5 64.2 76 74.9 9.7 65.2 92 74.8 8.3 66.5	% b.t. L V
	760 mm 6.8 48.5 90.3 11.8 65.9 84.2 20.7 73.5 80.9 21.7 73.9 80.7 35.2 77.3 78.0 64.5 78.0 77.2 65.4 80.9 - 79.0 82.4 76.8 56.5 79.4 77.2 83.2 81.2 77.0 85.8 84.0 76.8 90.2 86.3 77.0 95.5 91.5 78.1 98.4 95.5 79.4

Benjamin, 1932				Traube, 1896			
mo1 %	sat.t.	mol %	sat.t.	%	đ	%	đ
18.6 29.6 40.0 C.S.T. = -1.4	-5.8 -2.0 -1.5 50.0 mol %	50.0 67.7	-1.4 -3.0	2.726 5.247 8.222	0.99570 .99282 .98865	12.506 16.557 100.000	0.98054 .97427 .7891
به حدد خود خود جود خود حود جود خود خود خود خود خود خود خود خود خود خ	الله الله الله الله الله الله الله الله	د حدد فتين حصد حدد حدد خير فيند غداد خاني فاين فيند بيده غديد ا د حدد حدد حدد احد حدد حدد غدد غيان حود حدد خان مورد عدد خود		Othmer and J	osefowitz, 1	947	
Ewert, 1937				%	đ	%	đ
mol % 16.3 18.9 26.6	-8.9 -4.0 -1.8	mo1 % 43.3 57.9 58.3	-1.2 -4.8 -4.8	100.0 97.1 90.3 83.0 73.7 50.0	0.786 0.793 0.803 0.821 0.843 0.897	26.3 22.8 8.1 3.7 0.0	0.953 0.963 0.988 0.992 0.998
	-0.9	د می مواد است این		Vierk, 1950	0.697		
mo1 %	f.t.	E		mo1 %	đ	mol %	d
4.8 9.8 15.8 22.6 30.5 39.8 50.6 63.7 79.7 87.2 95.6 100.0	- 5.8 -10.0 -11.0 -11.0 -11.8 -11.8 -11.6 -11.0 -26.8 -42.8	-44.4 -47.7 -48.2 -48.4 -48.4 -48.4 -47.6 -47.4		0 3 6 8 9 12 17 22	0.9982 .9888 .9769 .9733 .9669 .9567 .9402 .9240	0° 23 25 29 31 45 70 87 100	0.9213 .9128 .9026 .8956 .8641 .8170 .7943 .7829
Ewert, 1937				Maslan and St	toddard Jr.,	1956	
mol %	f.t.	E		%	đ	Я	đ
10.0 14.5 14.6 16.3 51.3 70.0 79:2 86.0 100	- 4,2 - 9,0 - 9,2 - 13,2 - 13,2 - 12,7 - 13,3 - 21,4	- 45. 45. 45.	. 8	4.75 9.62 14.53 18.72 19.63 29.70 39.15	0.9873 .9887 .9709 .9608 .9594 .9368 .9144.	25° 59,96 78,77 87,02 92,43 95,86 100	0.8653 .8218 .8014 .7898 .7826 .7743

WATER + ACETONITRILE

Vierk, 1950				Vierk, 1950			
mol %	η	mo1 %	ŋ	mol %	n _D	mol %	n _D
0 3 6 12 22 29	1006.0 1091.1 1123.8 1105.5 1029.2 933.8	37 43 61 70 87 100	797.9 722.0 594.8 538.9 465.7 383.0	0 7 10 16 31 35 42	1.3330 .3414 .3430 .3459 .3478 .3479 .3479	60 61 69 79 100	1.3478 .3473 .3472 .3470 .3462 .3444
Somogyi, 191							
<u>%</u>			(mg/mm)	Sakhanov, 1			
11. 8. 5. 2.	557 506 272 247 726 363	17,4 4,365 17,4 4,483 17,6 5,460 17,6 5,981 17,9 6,479 18.0 6,842			at room 100 50 0	t. 36.1 59.7 81.7	
بي است سد سد اين سر ميد مي مست سي مي د	mol %	a ²					
	1.0 0.5 0.25	6.210 6.730 7.000		Vierk, 1950			
	است اسی سی بعدر حدد الی سید سی میدر سده در است اسی سیدر حین سعد میدر حید می سیدر است م	، جائد الله الله الله الله الله الله الله الل		mol %	Q mix	mol %	Q mix
Vierk, 1950 mol %	σ	mol %	σ	1.9 3.3	- 5.34 - 3.94 + 3.54 + 31.68	45.0 53.3	+185.07 +198.63
0.0 0.5 1.0 1.5 2.1 2.8 3.5 4.4 5.5 6.7 8.4 10.0	72.60 69.02 65.45 63.03 59.46 56.89 53.75 49.32 47.61 45.19 41.91 39.06	20° 13.0 16.9 18.6 20.9 23.1 25.4 31.3 39.6 48.9 65.5 100.0	35.22 33.38 32.40 31.84 31.56 31.01 30.61 30.02 29.67 29.02 28.37	5.6 9.9 14.8 19.8 39.0	+ 3,54 + 31,68 + 67,60 +100,46 +169,83	61.8 74.5 84.1 90.7 95.1	+200.93 +197.40 +167.30 +125.16 + 74.44
Benjamin, 19	032						
mo1 %	ⁿ He j	mo1 %	ⁿ He j				
0 20.0 40.0	1.33279 .33943 .34391	60.0 80.0 100.0	1,34491 ,34433 ,34 3 92				

Water Dro		2 11 N)		T			773 77 3 2712 3 2712 3 2 712	
	opionitrile (C ₃ H ₅ N)		Water + Ac	rylonitrile	(C_3H_3N)		
Rothmund, 1	Rothmund, 1898			Davis and Wiedeman, 1945				
mol %	sat.t.	mol %	sat.t.	%	sat.t.		sat.t.	
9.01 10.22 11.76 12.06 13.64 16.51 32.96 39.11	35.10 55.95 59.60 71.22 86.87 110.70 112.75	51.90 61.06 72.13 86.23 88.62 92.84 96.00	113.20 112.60 105.25 69.32 58.85 34.32 4.47	100 99.75 99.5 97.75 97.5 97 96.5 96	-82 -60 -40 0 +10 20 25 33 40	L ₁ 93.5 93.2 92.2 91.8 91 90.8 90.2 88 87.2	52,5 55 60,5 64 68 69 73 86 91	
Timmermans	and Kohnstamm,	. 1910		94.9 94.2	42 48	86	95	
C.S.T. = 11 dt/dp = -0.0	1.0 Limits	of P (5-165 k	(g/cm²)	12.8 11.8 11 10 9.6 9.3 9	90 85 80 72 66 62.5 60 52.5	L ₂ 8 7.9 7.8 7.5 7.4 7.3 -7.25	40 38 35 27 25 20 0	
Schükarew,	1910			8.4	49	- • • . رسي عب المدالم معرضي على المدالمة المدالمة المدالمة		
C.S.T. = 11	0.2°			========		در میں اس	الله الله الله الله الله الله الله الله	
%	% cooling heat (cal/gr) 153-20° 135-20° 112-20°			Water + Cyanamide (CH_2N_2) Pratolongo, 1914				
85.60 74.30	$94.33 \\ 102.6$	84.17 91.53	63.02 70.92			%	f.t.	
64.66 50.88 20.20 18.90 11.0	102.6 109.5 117.11 128.8 130.3 131.77	91.53 97.67 104.87 114.0 115.50 115.52	74.23 79.72 85.70 88.14 89.37	0 1.38 2.58 3.38 6.31	0 - 0.62 - 1.13	44.99 47.60 52.12 56.80	-10.76 - 8.92 - 5.81 - 2.49 + 0.28	
Water + Adi	iponitrile (C	6H ₈ N ₂)		9.42 14.98 18.40 24.70	- 1.48 - 2.60 - 3.96 - 6.19 - 7.58 -10.19	60.35 66.37 69.70 77.20 81.71 87.15	+ 5.12 + 7.85 +14.50 +19.32	
Silberman,	1953			26.09 28.62	-10.74 -11.88 -12.72	87.15 89.41 91.84	+25.60 +28.58 +32.00	
%	sat.t.	%	sat.t.	30.90 33.32 36.86	-13.93 -15.39	95.31	+35.78 +3 7. 90	
97.0 95.8 94.1 92.5 89.8 86.2 81.1 69.2 60.0 51.3 45.2	0.0 10.0 22.2 32.1 48.3 64.4 77.1 93.9 100.1 101.0	38.6 31.9 19.9 13.4 10.6 8.6 6.5 5.5 4.6 4.2	100.5 98.5 90.1 77.4 67.1 50.9 32.3 21.6 10.0	36.86 38.75 40.19 41.67 43.27 E: 37.3	-13.93 -15.39 -15.59 -14.39 -13.23 -11.80 8 % -16.6°	96.77 97.32 98.24 100	+38.60 +40.12 +42.90	

Water + Ethylene cyanide ($C_4H_4N_2$)	water + Methylamine (CH ₅ N)				
Schreinemakers, 1897	Felsing and Thomas, 19 2 9				
% f.t. % f.t.	t p t p				
5.49 - 1.2 91.95 - 5.77 0 93.57 24 9.47 17 95.06 29-30 10.23 18.5 100 54.5	13,39 % 20,83 62,1 59,96 525,0 29,89 130,3 69,97 780,2 39,88 216,7 79,98 1135,3 49,92 342,0 89,91 1607,4				
Schreinemakers, 1897	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				
sat.t. %	29.95 300.8 69.97 1446.5 40.00 466.1 75.40 1738.0				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	36,15 % - 0.45				
53.5 10.04 30.7 55 13.2 27.6 Timmermans, 1907	10.7 734.3 52.60 2703 15.15 773.0 58.56 3220 26.99 1182.3 67.59 4078 40.68 1852 73.54 4871 49.04 2419				
C.S.T. = 54°	m t p ₂				
C.5.1. = 54°	0.5101 0.8 0.81				
Timmermans and Kohnstamm, 1910 C.S.T. = 52.3 Limits of P (10-160 kg/cm²) dt/dp = -0.003	0.7935 0.8 1.28 1.1241 0.8 1.79 0.9147 20.0 2.79 0.7989 20.0 4.42 1.1177 20.0 6.18 0.1368 35.0 1.66 0.5839 35.0 7.41 0.8126 35.0 10.33 1.0646 35.0 13.70 0.5199 45.0 13.67 0.8314 45.0 10.96				
Water + Trimethylene cyanide ($C_5H_6N_2$)					
% sat.t. % sat.t.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
94.0 5.6 46.75 68.3 88.4 34.85 44.79 68.2 79.3 55.3 41.95 68.1 70.0 64.3 35.08 66.7 61.88 67.5 32.08 65.5 58.01 68.1 28.83 63.6 55.04 68.2 21.71 56 50.74 68.25 10.5 21.7	0.2421 75.0 18.83 0.5300 75.0 41.72 0.8403 75.0 66.30 1.2632 75.0 100.00				

Pickering,	1893						
9.	f.t.	%	f.t.	Pickering,			
		7.4 = 0	10.0	*	f.t.	<u> </u>	f.t.
27.08 26.90 25.45 24.39	-40.65 -38.45 -35.9 -30.8	14.70 14.68 13.95 12.23	-12.0 -12.8 -12.1 - 9.2	100	Amir ~79.0 (1+2	96.55	-82.9
23.96 22.69 22.33 21.49 20.14 19.85 18.83 17.25 16.97 16.54 15.69	-30.95 -28.4 -25.7 -25.25 -22.0 -20.2 -19.65 -16.6 -15.7 -14.05 -14.4	12.07 10.29 9.69 8.74 7.26 6.43 6.03 4.82 3.68 3.60 2.67	- 9.6 - 7.45 - 7.1 - 5.55 - 4.9 - 4.0 - 3.7 - 2.92 - 2.45 - 2.45 - 1.6	92.96 92.56 92.51 89.39 89.18 88.21 85.80 83.99 83.47 81.08 78.70	-82.8 -81.0 -82.0 -75.6 -75.0 -74.8 -73.3 -71.0 -70.5 -73.3 -70.5	77.48 76.50 73.60 72.87 69.58 64.14 62.78 59.45 56.39 54.33 52.05	-76 -74.9 -78.0 -84.0 -83.0 -80.0 -75 (?) -59 (?) -59 (?) -59
50.28 49.18 49.08 47.37 47.07 45.90	-50.55 -47.5 -48.05 -43.6 -43.55 -43.05	40.75 38.83 36.76 36.09 33.49 32.76	-37.45 -36.0 -36.7 -35.4 -35.95 -37.0	59.69 58.50 56.32 54.18	-56.85 -70.0 -55.35 -57.2	53.21 51.74 48.69	-47.0 -54.0 -46.2
45.69 43.96 43.09 41.19	-41.9 -40.55 -39.85 -37.2	32.76 31.45 29.55 28.83	-36.6 -39.7 -39.9	53.21 49.84 47.34 46.22 44.55 43.67	-24.35 -18.0 -15.75 -17.65 -13.35	31.22 30.78 30.177 28.33 27.15	- 7.75 - 7.4 - 7.7 - 7.73 - 8.03
Somerville,	1931			42.63 41.49 40.64	-13.9 -11.0 -10.78 -11.4 - 9.1	26.33 25.89 24.35 23.38	- 8.38 - 8.3 - 9.4 - 9.38 -11.65
mo1 %	f.t.	mol %	f.t.	39.90 38.10 36.98	- 9.33 - 9.1	22.09 21.90 21.03	-10.9 -10.95
3.12 4.37 5.83 7.16 8.18 9.74 10.56 11.98	- 3.39 - 4.94 - 6.96 - 8.97 -10.65 -13.58 -15.36 -18.69	13.79 16.23 18.43 20.40 23.87 30.75 37.32	-23.68 -31.61 -42.6 -39.8 -37.8 -40.5 -47.6	35.12 34.19 33.92 17.51 17.46 17.41 13.96 13.94	- 7.75 - 7.98 - 8.1 H ₂ -10.95 -10.75 -12.25 - 8.7 - 7.43	20.05 19.01	-13,3 -13,25 - 7,15 - 4,85 - 3,15 - 3,28 - 1,2
Water + Eth	nylamine (C ₂ l	H ₇ N)		Somerville,	1931		
Guthrie, 187	8			mol %	f.t.	mol %	f.t.
0.9901 5 10 15 20 20.64 25	f.t. - 0.4 - 2.0 - 4.7 - 8.4 - 13.3 - 13.9 E - 9.5	30 32,4 35 40 50	f.t. - 8.1 - 8.0 - 8.2 - 10.1 - 16.4	1,53 2,99 4,40 5,33 6,04 6,87 7,61 8,08 8,55 8,65 8,70	- 1.58 - 3.27 - 5.12 - 6.44 - 7.52 - 9.04 - 10.36 - 11.42 - 12.49 - 12.64 - 12.70 (11+1)	9.07 9.31 10.74 14.23 15.83 16.71 18.62 21.92 25.12 27.87 28.51 (3+2)	-13,30 -12,74 -10,33 - 7,83 - 7,73 - 7,85 - 8,54 -10,38 -13,02 -17,5 -18,5

					
Day Con and Duralling 1014				20	ć 25
Baud, Gay and Ducelliez, 1914 mol % d mol %	d	22.45 21.10	- 9.65 -10.9 - 7.65	15.34 10.44 5.90	- 6.25 - 3.65 - 2.05
17.5°		20,12		+1)	- 2.03
0 0.9988 44.84 1.75 9890 59.75 5.56 9682 64.50 10.63 .9510 64.58 12.69 .9432 86.73 13.34 9394 95.46 22.69 8977 95.95 26.50 8849 100 30.29 8694	0.8184 .7642 .7530 .7523 .7027 .6880 .6871	69.67 66.89 64.94 64.88 63.09 61.36 59.83 57.06 53.83 53.42	-70.0 (?) -66.0 (?) -70.0 -66.0 -37.1 -31.9 -31.1 -26.0 -21.75	41.64 40.43 38.02 36.95 34.83 33.18 31.71 29.13 28.54 25.72 25.51	-15.62 -15.65 -14.30 -14.3 -13.85 -13.65 -13.65 -13.64 -13.55
Schnell, 1927		49.05 47.52 44.79	-20.1 -18.95 -17.6	25.51 22.96	-13.4 -13.63
N o N	Ø		(8+1) seco		
0 74.7 8.38 1.50 57.3 10.4 2.66 50.4 13.6 5.74 42.1 15.7	35.1 31.1 25.8 21.9	64.02 60.71 57.52 53.85 49.21 44.53 40.70	-35.25 -30.25 -25.2 -22.0 -19.5 -16.8 -15.43	37.03 33.86 31.55 29.64 28.01 25.46	-14.0 -13.93 -13.45 -13.4 -13.2 -13.5
Baud, Gay and Ducelliez, 1914					
mol \$ Q dil mol \$ (by mole amine)	Q dil (by mole amine)	Water + Isop	ropylamine (C _s H ₉ N)	
2.03 416 48.61	4172	Pickering, 1	.893		
2.39 416 50,003 4.65 656 50.86	4732 4682	%	f.t.	%	f.t.
6.19 760 52.17 12.78 1600 52.83 16.87 2218 53.48 18.39 2518 54.89 19.35 2725 57.94 23.64 3053 61.20 25.16 3105 63.13	4840 4462 4740 4867 4804 4953 5105	68.76 67.90 65.50 64.72	-75 (x+1) -66.5 ? -59.5 -72	63.37 63.15 62.00 60.17	-62.5 -59.5 ? -66 -62
28.48 3259 63.76 30.84 3563 65.13 34.81 3656 69.57 42.35 3990 75.97 43.85 4258 79.19 44.13 4329 84.75	5271 5115 5389 5542 5780	14.05 13.93 10.11 63.15	- 5.4 - 5.9 - 3.3 -24.0	9,51 6,70 4,38	- 3.7 - 2.25 - 1.5
44.13 4329 84.75 44.41 4447 91.33 45.18 4349 (sic.) 93.3 45.35 3981 (sic.) 93.81 45.72 4184 93.91 45.96 4229 93.92 47.22 4164 94.4 47.37 4360 94.5	6035 6341 6377 6422 6431 6506 6356 6222	59.24 58.20 57.55 56.82 55.63 54.94 53.71	-20.1 -20.2 -18.5 -18.5 -16.8 -16.35 -14.5 -13.85	38.16 37.40 36.64 34.81 34.77 34.58 33.30 32.38 31.14	- 5.35 - 5.0 - 4.82 - 4.82 - 4.55 - 4.6 - 4.55 - 4.2 - 4.48
Water + Propylamine (C ₃ H ₉ N)		52.96 52.18 50.85 49.93 49.10	-13.1 -11.4 -10.15 - 9.8	30.91 30.61 30.14 28.56	- 4.55 - 4.32 - 4.25 - 4.63
		48. 8 9 4 8.7 4	- 9.65 - 9.15	28.26 27.24	- 4.1 - 4.6
Pickering, 1893 # f.t. #		46. 77 46.46	- 8.27 - 7.9	26.14 25.61 23.87	- 4.88 - 4.1 - 5.3 - 5.3
7 1.1. %	f.t.	45.86 45.55 44.68	- 8.0 - 7.55 - 7.3	23.66	- 5.3 - 5.3 - 4. 7 5
94.44 -67.0 82.41 93.62 -65.4 79.42 90.25 -62.5 78.68 88.59 -61.4 74.99 86.37 -60.7 74.67 83.69 -61.1	-63.7 -64.1 -67.8 -71.5 -71.0	42.85 42.27 41.98 41.89 39.91 39.85 38.40	- 6.45 - 6.05 - 6.5 - 6.3 - 5.5 - 5.57 - 5.4	22.97 20.97 20.88 20.42 18.24 18.07 17.49 16.15	- 4.75 - 5.75 - 6.22 - 5.7 - 8.0 - 7.37 - 7.9 - 8.87

Isambert,			- Dr. 6	81.92 81.29 78.66 78.23	(x+1) -76.0 (?) -76.0 -68.0 -67.5	75.33 73.36 72.57	-63.2 -62.5 -56.8
mo1%	limits of pres (in at	m.) 	π Dv %	Water + sec	. Butylamine (C ₄ H ₁₁ N)	
12.5 4.7	4-6 " 13 8-11 " 11-	-50	42.5 7 34.2 -	Pickering,		%	f.t.
0.5 N	8° Q diss =	6.25 cal/		67.96 66.63	f.t. (x+) -63.0 -56.3		-50.5 -37.3
Le Blanc ar	Butylamine (nd Rohland, 1		n _D	66.63 64.48 60.99 60.38 60.13 58.53 57.30	H ₂ 0 -39.3 (?) -35.7 -33.2 -36.1 -33.5 -29.15 -27.8	31.77 31.54 28.81 27.96 26.70 26.06 24.37	- 8.4 - 9.1 - 8.5 - 7.6 - 7.32 - 8.1 - 7.0 - 7.6
15	3.41	20° 0.9839 0.9722 0.9405	1.3429 1.3497 1.3629	57.04 55.44 54.91 53.37 52.61 51.09 49.19 49.15 47.93	-25.75 -21.95 -22.2 -20.3 -19.55 -19.25 -17.1 -16.02 -16.5	23.31 20.75 19.86 19.78 18.20 15.98 14.86 13.69	- 7.6 - 7.15 - 5.9 - 6.05 - 6.15 - 5.15 - 4.15 - 4.35 - 3.77
Water + Iso Pickering,	obutylamine (C ₄ H ₁₁ N)		46.06 45.05 44.13 42.62 42.14	-14.44 -14.25 -13.75 -12.3 -13.05	11.61 9.91 9.68 8.49 8.00	- 3.75 - 2.35 - 3.02 - 2.12 - 2.35
	f.t.	%	f.t	39.50 39.27 39.11	-11.7 -11.5 -10.65	6.63 6.60	- 2.0 - 1.25
71.48 70.32 69.96 67.89 67.34	-45.5 -38.5 -43.7 -33.0 -31.25	35.90 33.90 32.99 31.34 31.15	- 6.7 - 6.85 - 6.55 - 5.6 - 6.3	36.73 35.46 34.11 33.80	-10.65 -10.5 - 9.4 - 9.9 - 9.4	5.66 5.27 4.22 4.05 2.86	- 1.3 - 1.5 - 0.65 - 1.1 - 0.8
66.73 64.62 64.62 64.56 63.24 61.56 60.91 59.46 58.43 57.15 57.15 54.97 52.90 51.90 50.73 49.08 48.40 45.97 45.61 44.43 42.74 41.18 39.58 39.15 36.86 36.04	-33.2 -26.5 -25.8 -25.8 -21.9 -21.3 -20.05 -18.8 -17.47 -17.5 -14.7 -14.25 -14.0 -12.3 -12.25 -10.35 - 9.85 - 9.1 - 8.5 - 7.7 - 8.0 - 7.35 - 7.0	30.64 28.59 26.07 23.79 23.62 22.04 21.40 18.87 17.54 16.08 15.11 14.05 13.18 12.15 10.41 9.45 8.22 7.47 6.47 6.09 4.80 4.01 3.59 2.54	- 6.3 - 5.77 - 5.77 - 5.53 - 5.25 - 5.25 - 5.25 - 4.8 - 4.8 - 4.8 - 4.6 - 4.6 - 3.42 - 3.5 - 2.25 - 2.27 - 1.9 - 2.05 - 1.35 - 1.35 - 0.65 - 0.7				

Water + Amylamine ($C_5H_{13}N$)	Ralston, Hoerr and Hoffman, 1942 (fig.)
Pickering, 1893	mol % sat.t. mol % sat.t.
% f.t. % f.t.	33 92 10 41
(x+1) 87.72 -75 (?) 75.73 -47.2 83.25 -73.2 75.45 -50.0 82.44 -69.3 72.91 -41.9 82.14 -67.20 72.80 -40.3 80.01 -64.0 72.38 -37.5	33 92 10 41 30 78 8 39 25 63 2.5 28 20 50 0 31 15 42
79.26 -61.2 70.24 -33.4 77.86 -57.0 69.21 -28.0 77.52 -53.3 68.59 -26.7	Water + Dodecylamine (C ₁₂ H ₂₇ N)
H ₂ 0 67.53 -23.4 40.84 - 2.4	Ralston, Hoerr and Hoffman, 1942 (fig.)
66.28 -19.9 38.71 - 2.25 64.84 -18.1 38.49 - 2.15	mol % f,t, m.t. f.t, E complex
64.82 -16.7 35.85 - 2.15 63.52 -14.6 35.22 - 1.9 62.37 -12.8 35.05 - 1.95 61.18 -11.95 32.97 - 1.95 60.44 -10.65 29.95 - 1.4 60.18 -10.75 29.86 - 1.8 58.22 - 8.95 29.69 - 1.5 57.57 - 8.55 26.73 - 1.43 56.81 - 7.95 22.30 - 0.95 54.64 - 7.95 22.30 - 0.95 54.64 - 6.65 20.78 - 1.4 54.00 - 6.4 19.98 - 1.15 52.83 - 5.85 17.56 - 1.3 52.53 - 5.75 16.26 - 0.82 50.19 - 4.77 14.27 - 1.2 50.19 - 4.77 11.31 - 1.25 48.59 - 4.3 11.05 - 1.03 48.59 - 4.0 9.01 - 0.75	100 28
46.82 - 3.73 8.62 - 1.2 45.78 - 3.35 6.47 - 1.05	mo1 % tr.t. 1 2 3
45.04 - 3.35 6.09 - 0.63 43.53 - 3.03 5.91 - 0.85 43.04 - 2.93 4.66 - 0.85 40.88 - 2.62	28 37 24 20 38 24 15 1 38 24 15
Water + Octylamine (CaH ₁₉ N)	
Ralston, Hoerr and Hoffman, 1942 (fig.)	Water + Octadecylamine (C ₁₈ H ₃₉ N)
mol % f.t. m.t. f.t. E tr.t. complex	Ralston, Hoerr and Hoffman, 1942
100 - 1.0	mol % f.t. m.t. f.t. E complex
90 - 2.0 -5.0	100 52.5
• (6+1) II	

mol %	sat.t.	mol %	sat.t.
74 70	100 91	40 33	64 62 62
70 60 50	79 70	ĭ	62
mol %	sat.t.	mol %	sat.t
49 40	92 77	20	48 48
30	62	1	10

Water + Dimethylamine (C_2H_7N)

Pickering, 1893

	f.t.		f.t.
71,26	-67.5 E		
59, 33 49, 59 49, 00 47, 36 46, 47 45, 22 43, 15	(x+ -45 -44.8 -45.1 -47.6 -40.8 -46.6 -36.8	1) 43.00 40.79 39.26 38.74 36.57 34.58	-44.6 -42.1 -36.8 -37.15 -31.4 -25.0
19.75 19.02 18.01 16.75 15.74 15.16	-17.07 -11.95 -13.25 -13.42 -10.85 - 8.05	13.09 10.54 9.74 6.23 6.16 3.69	- 8.02 - 4.9 - 4.92 - 2.62 - 2.8 - 1.72
42.03 38.55 35.68 35.64 34.58 32.85 32.60 32.37 30.80 29.51 29.39	-36.2 -32.0 -20.8 -23.9 -20.5 -18.7 -19.05 -18.2 -18.3 -16.45 -17.5	28,55 27,05 26,00 25,65 24,35 23,32 22,69 22,16 20,59 19,75	-17.2 -16.6 -16.95 -16.9 -17.5 -17.0 -17.3 -17.1 -17.42 -18.12
50.26 47.97 45.76 43.70 41.54 39.57 37.58 35.61 33.70	8.07 - 7.48 - 7.33 - 6.92 - 6.8 - 6.62 - 6.57 - 6.5 - 6.7	31.87 30.10 28.52 26.96 25.45 24.03 22.73 21.50	- 6:9 - 7.0 - 7.13 - 7.3 - 7.85 - 8.6 - 9.25

f.t. - 3.94 - 5.61	mol %	f.t. -16.59
- 7.50	12.95 13.36	-16.49 -16.71
- 9.14	13.93	-16.82 -17.18
-12.62	16.44	-18.50
-17.35	17.84	-20.09
		-21.04 -37
-16.58	27.59	-44
	- 9.14 -12.62 -12.90 -17.35 -17.33 -16.98 -16.58	- 9.14 13.93 -12.62 14.53 -12.90 16.44 -17.35 17.84 -17.33 18.64 -16.98 20.55

Somogyi, 1916

Я	t	a²	
13.555 9.619 5.250 2.765 1.720	16.6 16.6 16.4 16.9	3.755 4.191 4.762 5.299 5.712	
mol %		a ²	
1.0 0.5 0.25		4.440 5.100 5.700	

Water + Diethylamine ($C_{u}H_{1,1}N$)	
% f.t. %	f.t.
Copp and Everett, 1953 100 -49.3	
mol % p H ₂ 0 38.35° 49° 56.80° 19.36 - 8.37 7.85 -	2.22
19.23 - 8.48 7.47	2.30 1.62
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	· 1.23 · 0.94
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.59
100 405 600 790 (8+1)	
72.70 -29.25 47.66 -20.70 -26.5 45.31	· 9.17 · 7.07 · 8.9
71.76 -22.4 45.21 - 71.45 -25.5 45.00	- 6.9
Guthrie, 1878 69.98 -21.2 42.74 69.60 -21.85 42.51	- 8.54 - 7.0 - 8.11
\$ sat.t. \$ sat.t. 67.45 -17.9 40.91 -67.05 -17.5 40.57	7.91 7.28
$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	- 6.9 - 7.69 - 7.9 - 7.50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- 7.50 - 6.5
36.89 123 75.76 170 64.05 -14.43 36.80 62.82 -13.3 35.96	- 7.39 - 7.31
62.03 -18.75 34.75 62.02 -13.5 33.83	- 7.38 - 7.55
Lattey, 1905 62.02 -14.22 33.37 61.78 -12.75 33.21 60.14 -12.47 32.24	- 6.3 - 7.22 - 7.22
% sat.t. % sat.t. 59.47 -11.4 30.81 -14.99 29.87	- 7.31
21.73	- 7.24 - 7.24 - 6.8
22.65 151.7 45.78 144.15 57.17 -9.89 28.39 25.04 147.5 48.89 145 57.11 -10.25 27.83	- 7.35 - 7.33 - 7.51
25.06 147 51.71 146.8 54.80 -19.25 27.34 28.60 144.4 54.24 148.5 54.64 -9.1 25.64	- 7.51 - 7.58
30.93 144 54.78 150.3 54.40 - 9.35 24.62 34.03 143.2 58.59 152.3 54.32 -12.3 24.36	- 8.00 - 8.1
22.65 151.7 45.78 144.15 57.17 -9.89 28.39 25.04 147.5 48.89 145 57.17 -9.89 28.39 25.06 147 51.71 146.8 54.24 148.5 54.24 148.5 34.03 143.2 58.59 152.3 38.18 143.5 58.99 156 52.54 -10.85 23.80 52.44 -8.48 23.43 51.67 -8.2 22.38 59.06 -10.4 23.12	- 8.36 - 8.21
51.67 - 8.70 22.38 50.06 -10.4 22.12	- 8.49 -10.51
	·10.31 · 8.83
(1+2) \$\frac{\fir}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac	19.35
	20.0 19.7
10 - 2.9 30 - 8.3 94.67 -22.65 83.53 -	21.3 23.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	23.6 25.25
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	25.75 27.35
23 - 9.9 70 -23.4 87.65 -19.7	

		1.7		Copp and Eve	rett, 1953		
Somerville, 19)31			mol %	Q mix	mo1 %	Q mix
mol %	f,t,	mol %	f.t.		25		
0.71 1.47 1.62 2.08 2.78 3.09 3.68	- 0.68 - 1.48 - 1.69 - 2.19 - 3.15 - 3.54 - 4.52	6.14 6.53 7.00 8.16 9.33 10.76 13.67	- 9.51 - 9.12 - 8.43 - 7.73 - 7.44 - 7.32 - 7.58	2.9 10.6 20.0 28.2 35.3	210 500 690 750 795	42.5 52.3 62.0 72.6 85.6	810 795 720 650 400
4.25 4.90 5.74 5.89 41.53	- 5.49 - 6.77 - 8.44 - 8.99	17.89 22.96 23.65	- 9.14 -11.83 -12.33 (8+1) -20.87	Water + Dipr	opylamine (C	6H ₁₅ N)	
45.22 49.54 58.27 63.18	-27.0 -25.2 -21.76 -20.75	68.55 86.6 88.1 9 6 .4	-20.45 -24.9 -30 -38	Pickering, 1	893 f.t.	<u> </u>	f.t.
Tichacek, Kmak	and Dricka	mer, 1956		100	-60	<u></u>	
mol %	D	mol %	D	75 70	H ₂ -11.65	0 47.70	- 2 3
6.9 15.4 20.6	-1.52 -2.19 -2.71	34.2 61.2	-3.24 -1.64	75.30 74.97 74.91 71.87 70.84 70.71 69.50	-11.3 -13.3 - 8.35 - 8.35 - 7.23 - 6.55	47.36 41.62 40.81 40.44 36.60 32.81	- 2.3 - 1.9 - 2.6 - 2.16 - 1.9 - 2.6 - 2.15
Traube, 1896				65.92 65.87 64.61	- 4.7 - 4.4 - 5.25	23.70 21.97 16.84	- 1.95 - 2.15 - 1.9
%	đ	%	đ	62.86 61.73	- 4.4 - 5.25 - 3.7 - 3.15	14.29 12.48	- 2.2 - 1.63
5.250 (15 0.99579 0.98901 0.98135	13.555 100	0.97482 0.7084(20°	58.88 56.86 56.84 53.36 48.12	- 2.95 - 2.8 - 2.4 - 2.55 - 2.5	7.11 6.47 4.51 3.89 3.76	- 1.15 - 1.1 - 1.65 - 0.75 - 0.6
Le Blanc and Ro	ohland, 189	6		97.37 97.25	-21.25 -21.1	89,04	-17,63
% (1+1	·	d 0°	n _D	95.61 93.46 92.92 89,85	-18.4 -17.1 -17.25 -17.35	86.37 84.78 82.36 80.03	-17.7 -18.48 -18.9 -20.10
11.14 15.81	0.9		1.3458 1.3511	89,85	-17,35	79.18	-19.7
Somogyi, 1916				Hobson, Har	tman and Kann	ing, 1941	
% a2	(nng/mmm.)	K	a² (mg/mm)	%	sat.t.	%	sat.t.
9.619 4 5.250 4	16.6 3.755 1.191 1.762	2.765 1.720	5.299 5.712	1.96 2.42 2.91 5.86 9.33	+52.6 +44.1 +36.1 +12.2 - 0.6	47.54 60.40 64.06 73.33 78.69	- 1.5 + 4.2 8.0 17.5
mol 9 1.0 0.5 0.25		4.440 5.100 5.700)	12.27 15.28 25.21 33.69 44.68 C.S.T. = 3	- 2.2 - 3.5 - 4.5 - 4.8 - 2.9	82.15 85.83 89.26 93.25	24.7 31.2 39.0 49.0 74.8

Water + Trime	ethylamine (C _s H ₉ N)		Water + Methy	diethylamir	ne (C ₅ H ₁₃ N)	
Pickering, 1	893			Copp, 1955			
×	f.t.	%	f.t.	mol %	p	mol %	p
	(11+	1)				5.0°	
77.95 75.23 72.44 71.96 69.79 68.11 67.04 64.28 64.22 62.36 59.59 59.48 59.04 56.66 54.01 52.99 50.44 50.02 48.88	-57.4 -59.35 -45.3 -43.65 -46.95 -35.85 -38.45 -30.15 -39.9 -33.65 -25.75 -18.25 -26.65 -18.75 -12.2 -16.2 -13.15 -6.6 -10.75 -9.2 -7.6	33.30 32.58 30.77 29.42 28.65 28.37 26.40 25.03 24.76 24.70 22.79 21.83 20.42 20.20 18.44 16.94 16.92 15.86 15.45	+ 1.15 + 2.35 + 3.0 + 5.05 + 4.05 + 4.25 + 4.75 + 5.75 + 5.15 + 5.3 + 5.3 + 4.85 + 4.15 + 4.15 + 4.05 + 3.55 + 3.25	0 0.50 1.09 1.68 2.57 3.23 5.02 5.93 8.12 12.58 16.00 22.40 26.60 32.70 0 0.50 0.89 1.89 3.38 4 88	42.20 83.55 132.35 165.30 188.75 196.30 204.90 207.10 210.60 215.20 219.10 224.75 228.85 234.10 479.65 177.00 253.40 358.10 379.50	37.15 45.00 51.45 56.35 60.65 65.70 70.95 74.95 78.75 83.85 89.60 Az 91.60 100 7.01° 38.85 42.15 48.10 55.00 58.30	237.35 242.80 245.70 247.80 250.55 252.85 255.10 256.35 257.85 259.95 262.00 261.65 254.60 399.65 401.35 408.35 408.35
45.65 44.51 42.47 40.92 40.27 38.82 36.86 35.69 34.86	- 2.2 - 5.75 - 5.15 - 2.35 + 0.75 - 2.4 + 0.6 - 0.65 + 3.4	13.52 12.83 9.36 9.08 8.60 6.84 4.85 3.30	+ 2.35 + 1.45 - 2.15 - 1.75 - 2.35(H ₂ 0) - 2.2 - 1.65 - 1.3	4 .88 7.31 10.03 12.92 15.65 20.95 25.25 29.90	383.90 384.95 385.65 386.35 387.00 388.75 391.35 393.90	63.90 67.60 68.80 75.70 82.40 85.50 Az 92.50	413.65 415.60 416.45 419.95 422.50 423.10 421.50 400.75
Diffe	rent series			mol %	wt %	vol %	sat.t.
Somerville, mol %	1931 f.t.	mol %	f.t.	2.9 3.3 5.0 7.1 8.2 8.7 10.5 12.0 13.1 20.5 32.1 35.4	12.5 14.0 20.3 26.8 30.1 31.5 36.2 39.6 42.2 55.5 69.6 72.6	17 19 26 34 38 39 44 48 50 64 76	52.08 51.28 49.81 49.46 49.45 49.43 49.42 49.46 49.53 50.52 53.16 54.01
3.84 5.00 6.81 9.18 12.49	+ 0.1 + 2.8 + 4.8 + 5.4 + 4.8	e 13.36 16.31 20.39 26.63 32.66 40.70	+ 4.1 + 1.7 - 2.0 - 9.4 -17.3 -33				

eteroge	neous eqili	bria			%			p	
						41.69°	84.849	93.83°	100°
ttey,]	1923				- 7 8 9 10	-	-	32.89 34.68 36.59	- -
% 	1.35°	4.40°	10.95°	23.34°	- 10 11 12 13	33.26 35.47 37.90 40.32	41.54 43.41 45.63	38.57 40.65 42.83 45.15	37.37 38.82 40.40 42.13
6 7 8	-	-	-	24.15 25.85 27.67	14 15 16	42.98 45.74 48.65	48.14 50.79 53.56 56.38	47.63 50.23 53.02	43.99 45.99
8 9 .0	14.94 15.66 16.43	20.02 21.58	25.97 28.07	29.61 31.69	17 18	51.66 54.93	59.25	55.89 58.93	48.11 50.37 52.77
1 2 3	17.23 18.25 19.36	23.25 25.07 27.01	30.49 33.25 35.89 38.71	33.93 36.31 38.84	19 20 21	58.49 62.23 65.93	62.16 65.62	62.13 65.50 69.06	55.30 57.96 60.76 63.70
14 15	20.56 21.82	29.10 31.36	38.71 41.70	41.57 44.47	22 23 24 25	69.78 73.75	69.20 72.92 76.94 80.78	72.85 76.58	66,77
.6 .7	23.15 24.57	33.79 36.42 39.25	45.01 48.50 52.27	47.57 50.88 54.20	24 25 26	77.84 82.03	X4.9X	80.49 84.61	69.97 73.30
18 19 20	26.08 27.69 29.41	42.30 45.59	56,19 60,28	57.65 61.30	27 28	86.49 91.12 95.99	89.31 93.84 98.56	88.92 93.48 98.25 103.27	76.77 80.39 84.14
20 21 22	29.41 31.23 33.16	49.12 52.94	64.45 68.83 72.77	65.13 69.15	29 30	101.02 106.24	98.56 103.48 108.62 113.99	108.52	88.04 92.10 96.30
3 14 15	35.22 37.43 39.77	57.05 61.50 66.22	72.77 76.85 81.14	73.37 77.77 82.37	31 32 33	106.24 111.74 117.52 123.54	119.62 125.49	114.01 119.71 125.67	100.69 105.23
6 7	42.25 44.88	66.22 71.29 76.67	85.65 90.22	82.37 87.18	34 35 36	129.82 136.37	131.65 138.08	131.84 138.27	109.90 114.80
18 19 30	47.69 50.71 53.97	81.39 87.46 93.88 100.66	94.98 100.19 105.17 110.60	- - -	37 38	143.18 150.19 157.42	144.80 151.84 159.19	144.91 151.82 158,97	119.84 1 25 .10 130.55
1 2	57.36 61.00	107.81	116.28	-	39 40	164.87 172.55 180.47	166.85 174.80 183.03	166.42 174.15 182.22	136,20 142,05
1 2 3 3 4 5 5 6 6 7	64.78 68.81 73.04	115.32 123.22 131.57	122.27 128.57 135.09	- -	41 42 43	188.72 197.36	191.55 200.36	190.01	148.20 154.55 161.1
6 7	77.47 82.19	140.19 148.55	141.86 148.82	-	44 45	206.38 215.79	209.45 218.83	199.33 208.40 217.85 227.67	168.0 175.0
88 89 10	87.10 92.31 97.77	156.48 164.47 172.73 181.14	156.08 163.68 171.54	- -	46 47 48	-	-	227.67	182.4 189.9 197.85
11 12	103.55	189.74	179.79 188.31	-	49 50	-	-	-	197.85 205.9 214.4
13 14 15	109.60 115.82 122.31 129.06	198.70 207.83 217.54	197.09 206.28	-					
6 17 18	136.02 143.33	-	-	-					
18 19 50	150.94 158.85 167.17	=	-	-					
, 	107.17	-	-						

18°

49.15 55.05 55.95 56.45 56.80 55.40 54.40 55.15 54.35 16.10

18°

0 9.7 13.1 14.55 15.2 15.4 15.5 15.55 15.6 15.6

18°

49.1 45.5 43.4 42.0 41.15 40.7 40.3 39.8 39.5 39.3 0

sat.t.

18.2 18.4 18.3 18.4 17.1 13.4 6.1 7 (?)

	Kohler, 1951		
Roberts and Mayer, 1941 mol % p p2	%	0°	p 10°
L V L V	 		10
0° 56.37 94.32 18.71 74.74 1.75 1.31 37.21 93.62 9.55 72.33 1.61 1.16 17.35 92.72 3.60 69.41 1.50 1.04 10.28 89.45 2.00 60.17 1.22 0.73 13° 88.45 95.12 57.70 77.64 4.32 3.35	100.0 91.0 86.4 74.0 68.0 38.5 16.0 9.1 3.2	19.05 	32.85 36.05 36.30 36.65 36.65 35.40 33.65 33.50 31.90 9.70
00.22 94.09 21.24 73.92	%		P ₁
H 40 51 09 01 14 07 70 06 4 68 515		o°	10°
30.75 93.91 14.87 73.32 4.05 2.94 2.93 2.93 2.93 7.37 6.4 4.00 2.93 2.94 94.04 6.93 73.76 4.00 2.96 2.7.48 93.85 6.32 73.11 4.00 2.93 2.94 2.94 2.95 2.95 2.95 2.95 2.95 2.95 2.95 2.95	100 90 80 70 60 50 40 30 20	0 2.6 3.7 4.05 4.15 4.2 4.25 4.3	0 5.7 7.8 8.5 8.65 8.85 9.05 9.2
90.26 94.92 62.28 76.90 5.15 3.96 89.43 94.92 60.12 76.90 5.07 3.90	10	4.4 4.5	9.3 9.35
78.52 94.49 39.44 75.34 5.00 3.77 75.56 94.50 35.52 75.38 5.10 3.84 70.86 94.27 30.23 74.56 4.99 3.72 70.02 94.31 29.38 74.70 5.05 3.77 65.50 94 12 25.27 74.03	7,	4.8 0°	9.6 P2 10°
65.17 94.14 25.20 74.11 4.97 3.64 62.84 93.94 23.15 73.41 - 7.60 68.94.06 21.65 73.83 4.97 3.63 54.02 94.26 17.31 74.53 4.93 3.66 52.74 94.06 16.58 73.83	100 90 80 70 60 50 40 30 20	19.1 17.5 16.45 16.0 15.2 14.65 14.0 13.1 12.2	32.8 30.35 28.8 28.0 27.35 26.75 26.1 25.3 24.7 24.2
97.51 96.22 87.4 81.93 5.75 4.71 97.32 96.35 86.6 82.84 5.75 4.76	0	0	0
88.9 94.36 58.7 74.85	Guthrie, 1878		
1 4/0/4 20,00 0./ /2.94 5.50 4.01	% sa	t.t.	%
16.5 93.62 3.4 72.33 5.50 3.98 15.9 93.81 3.3 72.97 5.47 3.99 9.0 90.10 1.7 61.85 5.30 3.28	10 21 15. 18	Į.	30 40 46.46 50 70 80 90 94.5

Rothmund, I	1898						
%	sat.t.	%	sat.t.	Timmermans, 19	007		
1.70 3.08 5.61 8.46	69.20 45.97 30.77 23.15	68.65 83.96 89.71 92.37	20.47 20.50 20.52 21.22	C.S.T. = 19°	35 %		
25.80 37.25	18.72 18.75	95.54 96.11	25.77 26.47	Timmermans and	l Kohnstamm, l	1912 - 191	.3
51.81	19.47			P	C.S.T.	, d	lt/dp
Roberts and	d Mayer, 1941			5 200 600	18.36 22.37 29.53	+(0.0206 0.0179 0.0125
%	sat.t.	%%	sat.t.	1000	34.5		-
92.0 73.0 44.8	22.2 20.0 18.7	25.1 15.7	18.4 18.9	5 600 1000 1500 2000	18.35 29.19 34.26 39.40 43.45	+(+(0.0182 0.0127 0.0103 0.0080
Krichevskii	i, Khasanova a	nd Linshits, 1	1955		د خود شهرین جمد می شود به انجامت جمد می شود. به خود انجامت شهرین شهر شهر آمو آمد خمد می شود.		
×	sat.t.	×	sat.t.	Quantie, 1954			
5.4 11.6 20.7 27.6	18.35 18.02 17.81 17.805	38.6 48.5 58.4	17.90 18.195 18.71	C.S.T. = 12.4°	39.7 %		
				Guthrie, 1878			
Rousset, 19	36			%	f.t.	%	f.t.
C.S.T. = 52	% 19.88°			5	-1.0	30	- 4.1
Vuonen 196				10 15	-2.0 -2.9	40 50	- 5.1 - 6.7
Kuenen, 189	P	C.S.T.	P	18 19.1 20	-3.4 -3.8 -3.5	70 80	-13.6 -20.6
18.3	r 0	20.0	79				
18.45 19.63	9.5 63	21.2 21.3	140 144	Meerburg, 190	0 - 1902		
19.95	78	21.9	146	%	f.t.	%	f.t.
Timmermans C.S.T. = 1 dt/dp = +0		, 1909 - 1910 of P (1-90 kg		1.72 3.54 4.17 4.8 5.87 7.37 9.8 12.75 13.45 17.3 17.9 19.5 20.4	-0.37 -0.562 -0.787 -1.0 -1.2 -1.5 -2.1 -2.8 -3.0 -3.5 -3.55 -3.7 -3.77	20.6 21.9 22.9 25.5 30.2 31.0 39.9 43.7 46.5 50.5 57.14 60.43	-3.8 -3.85 -3.9 -4.2 -4.5 -4.55 -4.55 -5.4 -5.8 -7.4 -9.8
				20.4	-3.75		
			ļ				

Pickering, 1	893			D			
%	f.t.	%	f.t.	Properties of			
		20		Tsakalotos, 19	09		
70.56 67.20	-16.0 -12.95	31.22 30.89	- 3.3 - 4.35	×	đ	%	đ
65.20 63.73 63.58 61.77 59.70 58.89 57.27	-13.1 -11.2 -10.3 -10.45 - 8.75 - 9.08 - 8.85	28.62 27.18 25.79 24.99 23.42 22.16 21.47	- 4.5 - 4.33 - 4.42 - 3.7 - 4.3 - 3.95 - 4.1	0 15.4 26.6 41.6	15° 0.9991 .9723 .9459 .9053	51.2 59.7 73.9 100	0.8830 .8623 .8211 .7323
54.88 53.41 52.94 49.30 48.54	- 7.2 - 7.45 - 7.85 - 6.05 - 6.38	20.68 19.84 16.67 15.80	- 3.3 - 4.05 - 3.13 - 2.8 - 3.23 - 2.55	Merzline, 193		a a	
48.15 44.92	- 6.43 - 6.05	14.76 12.80 11.25	- 3.23 - 2.55 - 1 05	mol_	<u> </u>	% .5°	<u>d</u>
43.54 43.35 41.20 39.19 37.18 36.90 34.98 32.32	- 5.4 - 4.87 - 5.3 - 4.98 - 4.35 - 4.95 - 4.72 - 4.7	10.69 8.71 7.91 7.36 5.61 5.44 4.63 3.29	- 1,95 - 2.35 - 1.6 - 1.25 - 1.6 - 0.95 - 1.1 - 1.0 - 0.7	100 80.6 59.5 49.4 39.9 20.0 12.7	10 1 9 4 8 4 8 8 7 0 5 5	05.8 05.8 39.1 78.8 58.3 15.05	0.7321 .7501 .7743 .7889 .8072 .8637 .9000
39.480	(H ₂ 0) sec	ond series	3 500				
36.809 34.349 31.899 28.482 24.842 21.691 20.193	-5.119 -4.993 -4.730 -4.515 -4.266 -4.017 -3.944	16.641 14.824 13.133 11.129 9.225 6.854 5.072 2.909	-3.592 -3.243 -3.065 -2.458 -2.022 -1.437 -1.032 -0.575	Krichevskii,	Khasanova an	d Linshits	, 1955
17.382	-3.632	.13			15.5°	16.0°	16.5°
96.21 95.65 95.02 91.85 91.79	-47.35 -46.1 -39.3 -29.4 -39.5 -29.9	82.01 80.97 79.99 79.11 76.77	-20.15 -20.75 -20.6 -19.35 -19.85	11.6 20.7 38.6 48.5 58.4	1.0958 .1245 .1593	1.0272 1.0966 .1255 .1602	1.0275 .0496 .0976 .1266
91.63 88.53 88.22 87.20	-24.45 -25.35 -24.4	76.40 76.21 74.01 73.58 71.62	-19.45 -19.15 -19.35 -18.74	Z	17.0°	đ 17.5°	18.0°
85.29 85.16 83.62	-22.25 -22.3 -21.6	71.62 71.16 67.89	-18.35 -17.4 -13.8	5.4 11.6 20.7 27.6	1.0279 .0501 .0684	1,0131 .0282 .0508 .0693	1.0132 .0286 -
Somerville,	1931			38.6 48.5	.0985 .1276	.0996 .1286	1.1297
mol %	f.t.	mol %	f.t.	58.4 100	.1620 .3713	.1631 .3 72 3	.1642 .3730
0.83 1.43 2.70 3.54 4.09 4.70 5.42 6.79	-0.85 -1.48 -2.94 -3.42 -3.65 -3.81 -3.95 -4.26	8.55 12.18 18.77 28.61 30.55 32.21 37.0 53.97	- 4.64 - 5.53 - 8.00 -14.1 -15.3 -19.21 -19.8 -22.9				
	(2+	1)					
						<u>.</u>	

Morgan and Eglof, 1916	Semenchenko and Zorina, 1952
t o	t n t n
0 % 0.50% 1.00% 2.10% 2.44% 4.79%	3.07 mo1 %
0 75.87 58.21 52.49 46.07 - 39.61 19.2 72.82 53.23 47.42 40.25 38.71 31.78 30.0 71.03 51.47 45.01 37.39 35.96 27.18 10.0% 50.5% 75.38% 94.96% 100% 0 31.33 25.25 23.94 22.64 22.31 19.2 24.40 21.73 21.50 20.67 20.53 30.0 - 19.56	14.8 2590 18.48 2193 15.8 2479 18.56 2191 16.8 2384 18.61 2181 17.45 2308 18.67 2177 17.7 2284 18.80 2197 17.93 2253 18.81 2171 18.165 2240 18.855 2179 18.350 2213 18.885 2157 18.42 2203 18.97 2142
Morgan and Evans, 1917	4.4 mol \$\frac{1}{2}.0 3814 17.93 2885 13.5 3556 18.03 2869
t 100 % L ₂ L ₁	14.9 3323 18.08 2827 14.8 3255 18.11 2881 15.95 3135 18.23 2843 17.03 3085 18.33 2836 17.08 3001 18.445 2824
25 19.49 20.38 22.37 30 18.99 19.75 23.54 35 18.50 19.11 24.15 40 18.02 18.51 26.08 45 17.50 17.93 27.52	17.35 2966 18.465 2810 17.6 2927 18.52 2752 17.83 2911 5.33 no. 1 \$
Merzline, 1935	14.8 3774 18.085 3375 15.75 3626 18.115 3359 16.8 3496 18.145 3396 17.37 3422 18.16 3406 17.73 3381 18.195 3427 17.90 3372 18.20 3383
mol % % σ	17.90 3372 18.20 3383 18.01 3387 5.88 mol %
100 100 22.92 21.08 80.61 95.8 23.19 21.08 59.54 89.1 24.02 22.59 49.44 84.5 24.47 23.74 39.98 78.8 24.70 22.96 20.00 58.3 25.98 23.64 12.75 45.05 25.90 23.57 4.97 22.6 28.16 24.55	15.65 3766 18.0 3424 16.0 3718 18.14 3473 16.35 3638 18.17 3499 16.63 3565 18.18 3520 17.1 3509 18.19 3545 17.3 3477 18.20 35.35 17.65 3447 18.21 3504 17.8 3416 18.22 3395 7.12 mol
Tsakalotos, 1909	16.2 3981 17.8 3818 17.15 3852 17.93 3843 17.55 3819 18.0 3875 18.06 3877 18.15 4040 18.085 3902 18.16 4149 18.115 3979 18.17 4197
0 1134 ^{15°} 51.2 4677 15.4 2563 59.7 4176 26.6 3984 73.9 2563	18.13 4006 18.19 4058 18.14 4022 18.20 3986 8.4 mol \$
Merzline, 1935 mol \$ \$ η	15.8 4293 17.96 4050 16.05 4252 18.02 4078 16.3 4215 18.07 4087 16.75 4169 18.14 4141 17.03 4106 18.16 4193 17.12 4078 18.20 4248 17.205 4099 18.235 4266 17.265 4076 18.245 4284
15° 100 100 410.4 80.61 95.8 557.7 59.54 89.1 921.6 49.44 84.5 1320.3	17.40 4074 18.275 4469 17.66 4066 18.285 4570 17.8 4065 18.295 4660 17.88 4064 18.325 3933
49.44 84.5 1320.3 39.98 78.8 1960.8 20.00 58.3 4287.6 12.75 45.05 4954.0 4.97 22.6 3427.0	15.8 4467 18.03 4150 16.5 4309 18.13 4192 17.0 4203 18.285 4286 17.5 4113 18.295 4563 17.9 4087 18.30 4292 17.945 4105 18.335 3926

	9.10 m			Benjamin, 19	932		
11.9 13.4	5429 5029	18.1 18.13	4192 4181	mol %	n _{He y}	mol %	n _{He} y
14.7 15.9	4707 4444	18.17 18.19	4264 4238		20	-	
16.65 16.78	4316 4240	18.22 18.24 18.25	4354 4389 4413	0 10.6	1.33279 .35807	50.0 70.0	1.40450 .40450
16.94 17.19	4234 4212	18.27	4475	30.0	.40014	100	.40032
17.48 17.715 17.8	41 80 41 55	18.285 18.29	4640 4644				
17.925	4167 4209	18.3 18.32	4645 4326	Kohler, 195	1		
17.985 18.025	4172 4123	18.335	4013	%	n _D	%	n _D
12.15	9.32 1		4007			 8°	
12.15 13.45 14.9	5343 5026	18.135 18.270	4221 4348	100	1.40123	77.7	1.40406
16.25 17.16	4710 4422 4251	18.295 18.3	4441 4507	96.3 92.9	.40181 .40230	63.5 39.5	.40525 .40319
↓ 17.3	4172 4148	18.305 18.305	4535 4556	16.4		6°	1 24440
17.45 17.76 17.91	4055 4153	18.31 18.32	4620 4517	16.4 11.5	1.38945	$ \begin{array}{c} 1.7 \\ 0 \end{array} $	1.34660
17.91 17.97 18.050	4141 4183	18.325 18.335	4377 4247	4.5	.36120		
_	9.46 m	101 %					
16.0 17.0 17.1	4490 4329	18.15 18.175 18.185	4278 4315	Krishnan,	1935		
17.45	4287 4224	$18.185 \\ 18.195$	4427 4483	C.S.T. inf	70 %	9°	
17.6 17.7 17.8	4243 4132	18.20 18.21	4438 4419			·	
17.92 17.98	4148 4175	18.22 18.23	4211 3974	t	molec Ph	ular cluster Pv	ring Pu
18.05 18.13	41 85 41 94	18.24 18.27	3938 3790		70		
-5,15	4252 10.1 п	no1 %	37,0	2 5	81 76	17 14	35 28
12.5	5577	18.04	4298	9.5 12	70 66	9.3 8.5	20 16
13.75 15.05	5185 4852	18.075 18.13	4301 4358	14.5 16.5	63 55 42	5.3 2.7	13 6.7
16.0 17.02	4596 4372	18.15 18.17	4372 4405	18 19	42 33	0.85 0.35	3.1 1.3
17.32 17.47	4325 4309	18.185 18.19	4450 4468	1	rizontal polari		1.0
17.65 17.82	4295 4269	18.205 18.205	4495 4501	4	tical polarisa		
17.9 18.01	4258 4271	18.205 18.22	4528 4311	Pu ≈ unp	olarised light		
11.85	11.47 5895	mol % 17.99	4277				
13.35 13.85	5410 5179	18.12 18.13	4377 4449 45 <u>3</u> 3	Alfrev and S	Schneider, 195	3 (fig.)	
14.7 15.1	4995 4891	18.15 18.155	4512 4533				
15.8 16.55	4763 4599	18.16 18.17	4551 4413	t u	ltrasonic abso	rption coeff 5	icient (cm-1) 7 9
17.35 17.75	4403 4387	18.19 18.19	4377 4145				
_	13.14	. ,	7170	9.5 13.5	$\begin{array}{ccc} 0.16 & 3.0 \\ 0.3 & 3.4 \end{array}$	6.1	7.6 12.7 9.0 14.2
14.8 15.9	5357 5047	$\substack{18.0\\18.08}$	4621 4602	17 18.5	1.0 5.0 1.5 6.3	11.5 1	1.8 18.8 4.3 23.4
16.55 17.1 17.4	4885 4726	18.095 18.10	4623 4650	19.5 20	1.65 6.5 1.7 6.5	$\begin{array}{ccc} 11.9 & 11.0 & $	5.1 24.7 5.1 24.9
17.7	4686 4639	18.11 18.12	4635 4661	• freque	ncy in megacyc	les/sec.	
17.91	4620	18.135	4615				
	شہر ہیں جب بھی اس جب سے شہرائیں کا آپ سے ۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔	ر جر من شب من من الرائد الله الله الله الله الله الله الله الل					
						· · · · · · · · · · · · · · · · · · ·	

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Thermal cons	ctante			18,12	20.0 wt % = 4. 1.16	.26 mol % 19.05	1.25
incimal cons	siants			18.25	1.16	19.17	1.34
Semenchenko	and Skripov,	1951 (fig.)		18.39 18.52	$\substack{1.18\\1.19}$	$\substack{19.26\\19.31}$	1.90 1.84
				18.65 18.79	$\frac{1.19}{1.20}$	19.37 19.42	1.78 1.76
t	U	t	U	18.92	1.22	17,72	1.70
i	.11 %	19	1.40		24.0 wt $\% = 5$.	.35 mol %	
17 17.5	$\substack{1.10\\1.12}$	19.2 19.5	2.25 1.85	17.83 17.97	$\substack{1.17\\1.18}$	18.94 19.07	1.29
18	1.12	20.0	1.70	18;11	1.19	19.17	$\substack{1.40\\1.56}$
18.25 18.5	$\substack{1.12\\1.25}$	20.2	1.70	18.25 18.39	$\frac{1.20}{1.22}$	$\frac{19.22}{19.28}$	2.12 2.03
				18.67 18.80	1.24	19.33	1.96
Comonahanka	and Chairman	1052 (64-)		13.00	1.26 33.5 wt % = 3	8.3 mol g	
Sementheniko	and Skripov,	1952 (fig.)		15.95	1.11	18.68	1.27
mol %	U	mol %	U	16.12 16.27	$\frac{1.11}{1.12}$	$\substack{18.78\\18.82}$	$\frac{1.31}{1.32}$
2.5	1.25	7.8	2.38	16.43	1.12 1.13	18.93 18.95	$\substack{1.36\\1.36}$
3 4	$\frac{1.30}{1.52}$	10	2.34 2.15	16.58 16.74	1.13	19.06	1.40
4.6	2.0	12	1.96	16.89 17.04	$\frac{1.14}{1.14}$	19.08 19.17	1.41 1.49
5.5 7	2.20 2.35	14 17	1.92 1.65	17.19	1.15	19.19	1.50
	2.50		1,05	17.35 17.36	1.16 1.16	19.25 19.26	1.88 1.91
				17.50 17.51	1.17 1. 18	19.30 19.31	2.34 2.47
Jura, Fraga	and al., 195	53		17.65	1.18	19.35	2.26
t	U	t	U	17.66 17.81	1.19 1.19	19.36 19.40	2.28 2.17
	critical	l region		17.95 18.10	1.20 1.21	19.41 19.45	$\frac{2.15}{2.12}$
14 28	26.0	19.97	38.7	18.25 18.39	1.24 1.24	19.46 19.52	2.12 2.07
14.28 15.89	26.0 27.1	20.20	37.2	18.39 18.51 18.54	1.26 1.27	19.53 19.62	2.09
17.03 17.83	28.5 31.4	22.22 24.59	33.3 29.8	18.65	1.28	19.73	$\frac{1.90}{1.96}$
18.37 18.45	46.6 52.5	25.97 27,74	27.5 26.8		38 wt % = 9	.8 mo1 %	
18,85	49.4	29.88	25.4	18.14	1.20	19.02	1.34
19.20 19.56	43.4 39.9	39,22	24.2	18.26 18.39	1.21 1.23	19.14 19.23	1.40 1.45
	• • • • • • • • • • • • • • • • • • • •			18.51 18.61	1.24 1.26	19.29 19.34	1.87
				18.78	1.28	19.39	2.31 2.22
Skrinov and	d Semenchenko	. 1955		18.90	1.31 44.7 wt % = 1:	19.44	2.14
				18.29	1.16	2.6 moi % 19.34	1.27
t	U	t	Ŭ	18.43 18.56	$\frac{1.16}{1.18}$	19.44 19.51	1.30
10.00		3.60 mol %		18.69	1.18	19.58	$\substack{1.34\\1.82}$
$\frac{18.30}{18.44}$	1.14 1.14	19.11 19.24	1.19 1.20	18.83 18.96	1.20 1.21	19.63 19.68	$\frac{2.09}{2.10}$
18.57	1:15	19.36	1.64	19.09	1.24	19.73	2.03
18.71 18.84	$\substack{1.16\\1.16}$	19.44 19.51	$\frac{1.62}{1.62}$	19.22	1.26		
18.97	1.17	19.57	1.57				
10 20	14 wt % = 2.	,-					
18.29 18.43	$\frac{1.11}{1.11}$	19.42 19.55	1.14 1.15	Gerts and	Filippov, 1956		
18.57 18.71	1.12	19.69	1.18	**			
18,85	$\substack{1.12\\1.13}$	19.82 19.93	1.49 1.50	II.	conductivity exp		
18.99 19.13	1.13 1.12 1.13	20.03 20.15	1.48	potential	difference on t	he Wheatstone	e bridge .
19.28	1.13	40.10	1.49				
				1			
				Į .			

					<u> </u>			
Copp and Ever	ett, 1953	3			Water + Ethyl	lenediamine (C;	H ₈ N ₂)	
mol %	Q mix	ζ	mol %	Q mix	Elgort, 1929)		
	- · · · · · · ·	15°			mol 9	f.t.		
8.0 8.6 10.0 14.2 20.4 25.8 30.6	290 310 375 490 550 595 590		37.0 40.0 47.2 56.0 60.7 67.6	585 565 550 510 495 450	0.0 4.4 8.6 12.7 16.1 17.7 19.4	0.0 - 6.0 -12.5 -28.8 -49.0 -50.5 -37.0		-53.0 E -53.0 " -52.3 " -52.5 " -53.5 "
Bellemans, 1	953 (fi	g.)	0 mix		24.5 30.0 33.0 35.0 37.4 38.7 39.7	-10.0 - 1.3 + 3.8 + 4.8 + 6.5		-52.3 " -10.2 tr.t 9.5 " - 8.8 "
		16°			41.6 44.1	+ 7.0 + 9.0		- 9.8 " - 8.8 " - 9.8 "
	10 20 40 42		360 470 565 570		45.0 47.4 50.2 55.0 59.0 66.4 69.9	+ 9.5 +10.0 + 9.5 + 9.0 + 8.5) 	- 0.5 E - 0.8 "
Water + Amine	es.				80.1 80.8 81.6 82.0 85.1 90.0 95.0	+ 2.2 + 0.6 + 0.9 + 1.2 + 3.6 + 6.3		- 1.0 E - 0.8 " - 0.8 " - 0.8 " - 0.8 " - 0.8 " - 0.8 "
	2nd Comp	•		Az	E = -53.0°	16.8 mol %		
Name	Formula	b.t.	%	b.t.	- 0.8°	81.0 mol % t	r.t. (2+1) -10° 33 mol%
Dimethy1-3,3- butylamine	C ₆ H ₁₅ N	112.8	-	92.9	mol %	0°	d 25°	50°
Ethylene- diamine	C ₂ H ₈ N ₂	116.5	70	118.5	0.0 4.4 8.6 16.1	0.9999 .9989 1.0034	0.9971 .9939 .9948	0.9881 .9842 .9828
Furfuryl- amine	C ₇ H ₅ ON	144	26	99	19.4 24.5 30.0 33.0 35.0	.0104 .0126 .0130 .0135 .0100	.9959 .9953 .9952 .9905 .9889 .9844	.9799 .9786 .9768 .9697 .9682
					37.4 38.7 39.7 41.6 44.1 45.0 46.5	.0026 .0009 0.9995 .9972 .9927 .9921	.9806 .9788 .9785 .9757 .9705	.9632 .9582 .9568 .9558 .9536 .9490
					47.4 50.2 51.7 52.8 55.0 66.4 69.9	.9876 .9842 .9814 .9796 .9753 .9657 .9559	0.9664 .9624 .9589 .9565 .9517 .9434 .9342	0.9433 .9401 .9360 .9340 .9289 .9221 .9118 .9055
					80.1 90.0 100.0	.9378 .9268 .9144	.9157 .9044 .8920	. 8942 . 8817 . 8703

Elgort, 1929	Water + Aniline (C ₆ H ₇ N)	
mol %	Lehfeldt, 1899	
0° 25° 50°		
11 242 1702 094 5511 11	100° L ₁ = 6.5 % L ₂ = 91.3 % p = 784.6	5
8,6 5338 11932 920 16,1 14932 4028 1549	% t Dp	
19.4 22684 5200 1881 24.5 32460 6690 2184	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
33.0 43000 8351 2571	$egin{array}{cccccccccccccccccccccccccccccccccccc$	
37.4 39505 7825 2423		
39.7 36255 7379 2306	Schreinemakers, 1900	
44.1 30298 6544 2214 — 45.0 28127 6374 2069		<u> </u>
46.5 26530	L V L V	
50;2 25063 5885 1991 51.7 24221 5667 1919 52.8 23466 5430 1907	56.3° 75° 0 0 125 0 0 2	300
55.0 17371 4610 1733 59.0 12446 3684 1530	0 0 125 0 0 2 1.86 6.84 126 1.38 5.62 2 2.52 8.84 - 2.88 10.82 3	289 297 300
66.4 9368 3058 1320 69.9 7415 2569 1174	3.35 10.51 - 3.46 12.06 3	30 1 301
80.1 4817 1940 978 90.0 3525 1533 847	3.49 11.58 - 4.18 13.68 3 3.91 12.82 - 4.6 14.44 3	301 302
100.0 2610 1260 737	4.27 15.5 - 4.35 15.08 3	302 302
		303 303
Water + Dicyclohexylamine (C ₁₂ H ₁₁ N)	% (V) t % (V) t	
water bregeronexyramine (C ₁₂ n ₁₁ N)	$L_1 + L_2 + V$	
Fouqué, 1918	13.4 41 18.2 75 16.66 49.5 19.75 82 15.5 56.3 19.15 90	
100 % (1+1) f.t. = 23°	15.5 56.3 19.15 90 17.47 64.5	
0.21 % (1+1) f.t. = 11° 0.16 % amine f.t. = 28°		
L	ehfeldt, 1899	
_	% b.t.	
	3.99 99.364 7.68 99.079	
	11.10 99.079	
	llexejew, 1886	
	% sat.t. % sat.t.	
	3 11 16 74 06 157 5	
	3.58 55 84.03 137 5.25 77 93.96 68	
	14.11 142 94.57 39 21.01 156 95.02 25	
	36.87 164.5 95.42 8	
		-
. .		

Sidgwick, Pickford and Wilsdon, 1911	Hill and Macy, 1924
sat.t. % sat.t. %	% f.t. % f.t.
13.8 3.611 89.9 6.436 17.6 3.640 93.4 6.690 22.7 3.663 108.8 7.960 27.0 3.685 125.3 10.08 30.6 3.752 145.1 15.43 32.6 3.830 167.0 30.18 34.7 3.879 165.0 63.60 39.8 3.956 160.8 67.12 50.1 4.187 154.4 73.40	0.00 0.00 96.90 -9.4 1.42 -0.28 97.17 -11.7 1.87 -0.38 97.78 -10.05 2.575 -0.51 98.32 -10.02 2.66 -0.54 98.98 -8.87 3.28 -0.665 99.16° -8.41 95.64 -0.665 100.00 -6.15 96.42 -0.570
52.0 4.300 153.7 73.86 54.0 4.347 150.4 75.88 58.7 4.552 127.2 83.42 61.4 4.552 97.4 89.57 62.8 4.709 74.9 91.912 66-0 4.847 66.6 92.53 68.6 4.984 59.3 93.06 72.3 5.166 51.1 93.51 77.1 5.481 43.2 93.922 79.7 5.640 35.6 94.280 81.6 5.754 27.8 94.594 86.6 6.120 20.0 94.877	Applebey and Davies, 1915
86.6 6.120 20.0 94.877 C.S.T. = 168	
	Pound and Russel, 1924
Vol+hoff 1017	% d
Kolthoff, 1917	30.4°
% Sat.t. % Sat.t. 3.5 25 55 156.5 5.4 87 80 134	96.471 1.01342 2.860 0.99667 0 0.99555
10 118 90 96.5 20 144 94.8 39 50 158 95 33 52 157.5	Mondain-Monval and Quiquerez, 1940
Atkins and Wallace, 1913	t d L ₁ L ₂
E = -10.25°	31.08 1.014 0.9970 42.72 1.005 0.9923 47.70 - 0.9923 56.75 0.9964 0.9892
Timmermans and Kohnstamm, 1909 - 1910	59.9 0.9929 0.9875 73.90 0.9821 0.9798 92.00 0.9678 0.9714
C.S.T. = 165.0 Limits of P ($10-210 \text{ kg/cm}^2$) $dt/dp = +0.009$	Applebey and Davies, 1915
	% п
Applebey and Davies, 1915	20° 100 4468
\$ f.t. \$ f.t.	99.773 4410 99.656 4380
100 -5.980 97.048 -10.30 99.773 -6.675 96.628 -8.80 99.656 -7.050 96.180 -6.15 99.511 -7.550 96.120 -5.65 99.152 -8.400 95.873 -4.00 98.985 -8.625 95.781 -3.60 98.510 -10.00 92.797 -0.50 97.941 -11.00 92.392 -0.43 97.425 -11.85 E 92.072 -0.38	

WATER + DIMETHYLANILINE

p 11 P.	1024		# 1	Water + Dime	thylaniline (CoH. N)	
Pound and Ru	issei, 1924 	 %					
×	<u> </u>	30.4°	<u> </u>	naikins and	Humphrey, 1915		
96.471 2.860	3077 842	0	793	σ (interfaci	al) at 25° = 3	25.78	
Whatmough,	1902			Water + o-T	oluidine (C ₇ F	I ₉ N)	
t	σ	t	σ	Angelescu,	1925		
	I	1		t			
15.0 25.4	58.80 57.86	55.3 64.6	54.77 53.55		L ₁	L ₂	
34.8 44.2	57.09 56.00	73.8 80.0	52.65 51.91	0	1.6	8 97.6	65
	1	-2		120 122	1.6	9 9 7. 5 9 3. 1	50
15.0	53.52	54.7	49.24	150 163	5.6	88.4	
26.0 34.9 45.0	52.71 51.05	64.1 73.8	48.09 47.07 46.09	181 185	12.4	6 -	33
45.0	50.56	83.0	40.09	198 200	16.4	79.7	
Applebey and	d Davies, 1	915		207 212 215	=	74.7 66.8 56.0	80
· · · · · · · · · · · · · · · · · · ·	%	n _D	·	1	c. = 216 50	.09 %	00
		20°					امان الله الله الله فيه خام فالياض الله الله الله الله الله الله الله ال
	100 98.9516	1.586 1.583	396	Mondain-Monv	val and Quique	ez, 1940	
	97.8768 96.9429	1.581		t	d L ₂		d H ₂ O
Pestemer and	l Platten,	1933		0.2 9.6 21.0 31.1	1.0176 .0102 .0019 0.9930 .9811	$0 \\ 15.3 \\ 21.8 \\ 31.10$	1.0023 .0006 0.9999 .9970
%		х	T	45.5	.9811	50.70	.9908
		L ₁	L ₂				
.0		0.2065	0 2715	Water + p-To	luidine (C ₇ H ₅	,N)	
10 30 60		1.127 1.107 3.177	0.3715 0.05781 0.02065	Walker and B	severidge, 1907		
80 90		1 .371	0.02825 0.00520	t	p diss (1+1)	t	p diss (1+1)
95 100		-	0.00601 0.00147	5	3.0	30	22.5
				11 18	5.0 9.0	32 34	26,5 29.5
Alexejew, 1	886	ن وبهوندي مدم اللم فني فني اللم اللم في اللم فني اللم الله	و من الله الله الله الله الله الله الله الل	20 25 28	10.5 15.7 20.0	36 37	33.0 36.0 1+1)
%	U	%	U				
0 2.83	1,023	96.14 100	0.5587 0.5192				
***************************************	%	Q mix (cal,	/gr)				
	18.5 97.01	- 5 -228					
				<u>L</u>			

88			WATER + o-	PHE
Water + Pher	nylenediamine	e-o (C ₆ H ₈ N ₂)	
Sedgwick and	Neill, 1923	3		
Я	f.t.	%	f.t.	_
4.05 5.85 11.86 18.72 23.43 31.55 46.81	35.1 45.8 56.3 61.3 62.8 64.2 66.1	62.53 74.74 88.36 93.83 96.15 97.72 100.00	67.7 71.3 80.8 88.1 91.7 95.5 103.8	
	nenylenediam	ine (C ₆ H ₈ N ₂)	
	K	f.t.	II	
3 4 4 4 5 6 6 7 7	3.27 8.71 9.22 2.64 7.16 9.05 1.21 6.17 2.82 3.77 9.83 1.94 9.65 9.65 1.94 9.65 1.95	0.3 14.3 18.3 22.0 23.1 24.1 25.1 26.3 27.1 27.9 29.0 29.1 30.2 31.5 32.8 34.4	10.3 4.6 9.3 11.7 16.1 17.3 18.7 19.9 20.8 22.7 26.0 28.7 32.6 43.5 57.6 62.8	
	nenylenediam I Neill, 192	ine (C ₆ H ₈ N ₂)	
%	f.t.		f.t.	_
1.08 3.70 9.85 18.75 27.22 34.43 41.75	3.6 23.7 37.8 49.9 59.2 64.6 69.2	51.80 59.02 70.03 78.10 86.63 95.04 100.0	75.5 80.3 88.5 95.9 107.0 125.1 139.7	

Water + Phenylhydrazine ($C_6H_8N_2$)								
Blanksma, 1912								
		×	···	b.t.				
	L	v						
	49.7 68.9 91.9 97.5	1 4 40 100	6	104 106 114 170 243				
%		đ	я		ð			
100 92.3 85.7	3 8 4	1.099 1.096 1.091 1.085	74.3 60.0 11.7	1	. 089 . 049 . 013			
K		f.t.	%	f	t			
100 99 98 98 98 97 95 93 92 91 85 83 79 75	.8 .1 .2 .5 .7 .8 .7	19 6 17 16 6 E 17 18 8 23 2 2 25 7 26 2 26 1 24 5 24 4 24 2 23 8 21	64. 2 60 1 11.6 10:9 10.4 9.6 8 7 6 5.2 4.7 4.6 4.4 3.9 2.2	20 4 19 8 19 8				
*		sat.t.	%	sa	t.t.			
59.5 58.5 54.5 53.4 48.4 46.41.39.	5 4 7 7 5 2	19.8 24 33.6 39.6 44.2 46 50 50.6 52.6 54 55	36.9 33.6 31.4 29.7 28.3 25.2 21.9 18.7 16.5 13.8		2-57 2-57 1-57 6-56 5 4-56 52 4 49 4 45 34 19 8			
Oddo,	1913							
*	f.t.	%	f t.	×	f.t			
100 98.86 98.23 97.65 97.04 96.45 95.84 95.24 94.10 92.98	19.35 16.42 16.00 20.42 22.21 23.30 24.20 24.88 25.59 25.90	91 . 41 90 . 90 89 . 82 88 . 85 87 . 90 86 . 91 85 . 97 84 . 68 82 . 59 78 . 24	25. 90 25. 80 25. 62 25. 38 25. 12 24. 80 24. 56 24. 14 23. 49 22. 22	75. 53 74. 58 73. 13 71. 02 68. 54 64. 68 63. 97 61. 69 59. 34	21 . 21 21 . 04 20 . 80 20 . 51 20 . 19 19 . 82 19 . 79 19 . 70			

r			 				
Water + Diphenyla	mine $(C_{12}H_{11}N)$)	Water 4	Piperid	line (C ₅ H ₁	, N)	
Campetti and Delg	grosso, 1910 - 19	13	Ewert,	1937			
% sat	.t. %	sat.t.		mol %	f.t		Е
97.19 15: 92.93 21: 90.23 22: 88.28 23: 86.73 24: 82.08 28: 73.07 29:	10 45.15 16.50 15.62 17 3.49 11.48	304 303 297 275 264 231		8.4 26.9 35.8 47.9 53.5 57.8 68.2 78.4	- 4, -22, -27, -19, -15, -13, -12, -13, (2+1	8 3 2 3 3 4 6 2	-31.9 -31.9 -31.9
Perkin, 1896	. (0 711911)		Tsakal	otos, 190)9		
% d		d	7,5		d		d
0 0.99 94 1.00	15°	0.9856	0 46.4 62.6	{	20 .9983 .9576 .9386		0.9177 .8604
			Teite	lbaum and	l Trifonov,	1947	
Water + Acetopheny	lhydrazone (C ₉ H	₁₂ N ₂)	mol %	%	0°	25°	50° 7 5°
Blanksma, 1912			0	0	0,9999	0,9971	0,9881 0,9749
mo1 % 100 97.8 95.8 94 92.4	f.t. anhydre 26.6 25.4 24.5 23.7	f.t. (1+1)	5 10 20 30 40 60 80 100	19.9 34.4 54.1 66.9 75.9 87.6 95.0	.9980 .9870 .9675 .9519 .9386 .9159 .8957 .8810	.9808 .9698 .9477 .9302 .9171 .8932 .8750 .8585	9686 9514 9508 9304 9256 9032 9077 8830 8928 8684 8677 8434 8503 8265 8366 8112
91.8 90.9 90 89.4 88.3 87	22.8 21.8 21.8 21.8	32 32.8 32.8	Tsakalo	otos, 190	9		
80 60	-	32.8 32.8			n	%	η
40 E = 24°	L ₁ + L ₂	32.8	0 46.2 62.0	ţ	20 1002 5346 6931	76.7 100	6708 1486

						1	v
Teitelba	um and Trifono	v, 1947 	ر سين شديد الله الله الأنسانية الدين شديد الديد الد		Water + 1-Meth	ylpiperidine (C ₄	H ₁₃ N)
mol %	0°	25°	n 50°	75°	Flaschner, 190	8	
					%		t.t.
0 5 10	1800 6440 11200	815 1900	550 887	381 512		lower	higher
1 20	18400	3060 4760	1260 1770	659 845	5.3 5.8	77 69.5	178
30 35	21500 21600	5400 5420	1940 1940	901 892	6.4 8.0	63.6 54.1	- -
40 60	20200 11200	5130 3380	1860 1380	872 705	8.8 10.3	50.3	196
80 100	4760 25 7 0	2050 1310	993 757	571 545	13.0	48.7	236
	نے میں میں بھی اور انہوں کے اس انہ اس ان انہوں کے انہوں کی میں میں انہوں انہ	, عبر شیر شیر سی سے سے اس اس عبر سی سی اس میں اس سے اس اس اس		======	13.5 16.7 21.3	48.3 48.5	-
		30.0			1 26.9	48.7	-
Teitelba	um and Trifono	v,,1947			37.2 46.3 55.9	49.5 51.2	-
	mol %		ⁿ D		55.3 74.2	55.0 61.5 hi	gher than 275
		25°	50°		83.4 89.6	70.0 85.5	230
	0	1,33239	1,32918		89.6	112	176
	5 10 20	.36460 .39142	.35878 .37703				
	40	.41631 .43793	.40229 .42600		Water + 2-Methy	ylpiperiðine (C ₆	H N)
	60 80	.44813 .45117	.43490 .43740			_	13 /
	100	.45197	.43760)	Flaschner and M	lac Ewen, 1908	
					×		at.t.
Trifonov,	Ust-Kachkints	ev and Tei	telbaum, 1	947	\ 	lower	higher
mol %	هد مي سر مي هو هو مي شو هد شو مي	x			72.3 64.7	165 112	-
	0° 0	° 25	∘ 50	0	60.4 52.4	94	221.0 225
	r 1 day 60	days	~~~~~~.		47.0 39.7	88.8 87	-
1.0 2.0	16.334 - 20.000 21.		250 42.	752	33.7	87.2	-
2.0 5.0 10.0	12.000 12. 4.682 4.	400 20.3	250 28	210 200	29.2 28.3	83	227
$\begin{array}{c} 15.0 \\ 20.0 \end{array}$	1.865	912 3 4	280 5. 522 2.	000 104	24.0 20.1	81	227
25.0 30.0	0.163 0.	1/5 0.8	320 1.3	503	19.4 15.0	79.3	220
35.0 40.0	0.088 0.	120 0.6 101 0.3	325 1. 399 0.	598	13.8 10.6	79.8 80.4	
45.0	0.045 0.0	071 0.2 052 0.1	230 0.4 151 0.3	105	9.7 9.5	82.4	188
50.0 60.0	0.0084 0.0	0.0 015 0.0) 91 0 .1	l52	8.6 8.2	86.5	-
70.0	0.0015 0.0			98800	7.8	92.4	171
					l l		

			- Carlos - C	1				
Water +	3-Methylpiper	idine (C ₆ H ₁₃	N)	Water + 1_	Propylpipe	idine (C	_в н ₁₇ N)	
Flaschne	er, 1909			Flaschner,	1908			
	%	sat.t	higher	%	sat.t.	Я	sat	.t.
	74.8 70.1 58.2 50.5	142.2 115.0 82.0 69.8	184.0 204.0 226.5 232.0	0.6 1.4 2.7 3.2	+32.0 +11.0 + 0.5 - 3.0	97. 97. 98 .	4 + 9 9 +15 4 +30	. 5
	38.1 29.2 19.2 9.9 4.8	59.9 57.5 56.9 58.1 80.0	234.0 235.0 228.5 197.0 143.0	Water + Az	acyclooctan	e (C ₇ H ₁₅ N	i)	
				%	sat.t		%	sat.t.
Water + 4	4-Methylpiper r, 1909	idine (C ₆ H ₁₃ 1	i)	2 3 5	40 20 0		0 8 L ₁ + L ₂	-11 -13
	X	sat,	higher	30 40 50	-13 - 9 0	8	70 30 36	+22 36 46
	57.5 55.0 49.4 42.4 36.2 30.0 23.7 16.0 11.6	133.0 122.7 106.9 95.5 88.8 85.9 84.9 85.1 87.6 94.2	168.5 183.6 187.5 189.5 188.8 186.2 178.0 157.8 146.0	Water + Py				
					2nd Comp.		Az	
Water +	1-Ethylpiper	idine (C7H15	N)	Name	Formula	b.t.	*	b.t.
Flaschn	ner, 1908			Pyridine Methyl-2-	C ₅ H ₅ N C ₆ H ₇ N	115.4 129.5	57 52	92.6 93.5
- %	sat.t.	%	sat.t.	pyridine	- ,			
$\frac{0.9}{1.7}$	homogeneo	25.5	7.45	Pyrazine	C4H9N2	114	60	95.5
2.1 3.4 4.1 5.3 6.6	64 52.5 34.7 29.2 22.7 17.6	34.0 38.8 46.1 50.8 62.8 77.0	7.45 7.5 7.7 7.9 8.7 11.4 16.6	Piperidine Nicotine	C ₅ H ₁₁ N C ₁₀ H ₁₄ N ₂	106 246	65 2.5	92.8
8.3 10.0 12.4 15.8 21.6	13.1 10.5 8.7 7.8 7.45	84.3 92.9 95.3 97.0	21.9 40 69 homogeneous			_		
				JJ				

j.			mol %			mol %	
Water + Pyridine	(C.H.N)		L	v	L	,	v
mater i lyrrami	(0,11,11)		· · · · · · · · · · · · · · · · · · ·		50°		
Heterogeneous ec	uilibria .		0 1.1	0 11.7	49. 58.		38 2 44 2 52.5
Ewert, 1936			3.6 7.4 14.6 22.4	18.7 20.8 22.9 25.0	68. 80. 83. 88.	9 2 9	52.5 63.0 67.4 72.5
mo1 ∮ 20°	p 25° 30°	p ₂ p ₁	32.7 43.0	28.9 34.6	93. 100 80°		81.3 100
0.0 17.5 10.0 22.5 20.0 22.6 30.0 22.6 40.0 22.7 50.0 22.4 70.0 21.9 80.0 20.8 90.0 19.1 100.0 16.7	23.7 31.9 29.3 38.8 29.6 39.3 29.7 39.3 29.8 39.4 29.8 39.2 29.3 38.3 28.5 37.2 27.2 35.2 24.9 32.0 21.2 27.8	- 31.9 9.6 29.2 12.1 27.2 13.9 25.4 15.7 23.5 17.2 21.7 19.0 19.3 21.0 16.2 23.0 12.2 25.2 6.8 27.8 -	0 1.1 2.4 5.0 8.7 13.7 20.0 26.8 34.0	0 13.7 17.1 20.1 21.6 22.6 24.0 25.4 27.8	41. 48. 58. 68. 76. 82. 94. 100	.6 .7 .5	30.8 33.4 37.9 45.3 52.9 59.0 81.9 100
			Jones and Spea	kman, 19	21		
			d(25°)		p	<u></u> b t	· · · · · · · · · · · · · · · · · · ·
Ibl, Dändliker	and Trumpler, 1	1954			Az		
mol %	p	p ₂ p ₁	1.00315		767.0	93.0	
	50°		.00313 .00311 .00316		633.5 483.0 358.5	87.7 80.8 73.7	
0	92.5 103.6	0 92 5 12.1 91.5	.00316		235.5	64.2	
1.1 3.5 7.4 14.6 22.4 32.7 43.0	110.9 113.4 115.0	20.8 90 1 23.6 89.8 26.3 88 7 28.8 86.3 33.2 81.9	Kaiser, 1956				
l 49.4	$ \begin{array}{c} 113.2 \\ 111.6 \end{array} $	39.2 74.0 42.6 59.0	р	t	p		
58 2 68 9 80 2 83.9 88.5 93.2	108.9 103.0 95.4 92.7 89.3 83.7 72.1	48.2 50 7 54.1 48 9 50.1 35 3 62.5 30 2 64.7 24 6 68.1 15 6 72.1 0	760 160 157 138 70	92.7 58.1 57.9 53.7 36.9	Az 50 40 30 15		34.3 29.9 26.1 16.9
	80°						
0 1.1	356.0 408.9 420.5	0.0 356.0 56.0 352.9 71.9 348.6	Zawidszki, 1900)			
2.4 5.0 8.7	430.8 435.7	86.5 344.2 94.3 342.4	mol % L	v	p	p_1	p ₂
13.7 20.0 26.8 34.0 41.7 48.9 58.6 68.7 76.5 82.0 94.7 100 Az : 1) at	443.4 439.5 435.3 428.1 415.4 391.0 366.0 344.0 283.7 244.0	99.3 340.1 106.0 335.7 112.6 330.8 122.2 317.3 134.1 301.2 143.0 285.1 157.4 258.0 177.1 213.9 193.6 172.4 203.0 141.0 232.4 51.3 244.0 0	81,47 52 74,73 44 72,42 44 54,13 33 42,41 28 33,64 25 21,58 24 16,05 23 10,88 23	5.12 2.62 4.56 4.00 3.46 3.78 5.60 4.42 3.78	238.9 312.9 344.7 367.8 373.8 415.2 431.0 449.1 441.0 440.6 437.9 432.7	0 109.1 163.3 203.9 209.3 276.3 307.0 325.8 333.3 335.9 334.8 336.0	238.9 203.8 181.4 163.9 164.5 138.9 124.0 113.3 107.7 104.7 103.1 96.7
2) at	80° 25 mol %	5 p = 444 mm	0.18	2.35 1. 78 2.45	432.7 428.9 356.8 355.0	335.5 348.0 355.0	93.4 8.8 0

Pickerin	ng, 1893			Blanksma, 1	912			
76	f.t.	%	f.t.		С	f.t.		
2,400	-0.51	57.869	- 9.66 -10.91		0.240	-21.8		
4.587 7.698	-0.96 -1.46 -1.76	60.071 62.238	-12.95		(1+1)			
10.533 12.829	-2.09	64.845 67.584	-15.95 -20.3		0.090 0.187	0 -15		
15.712 18.083		69.294 70.621 71.838	- 24.7 - 26.5 - 28.75	Í	0.412	-32.8		
21.550 25.014 28.184	-3.10	73.771 73.771 (s	_ 17 5			······································		
34.210 38.423	-3.88	75.990 76.806 77.575	- 35.0 - 37.1	Kornfeld,			~	
42.391 44.584	-4.77 -5.37	78,033	- 38.5 - 40.5	#	f.t.		f.t.	
47.441 50.344 52.717 55.412	-5.83 -6.67 -7.66 -8.47	80.090 81.191	- 45.75 - 48.5	1.038 3.051	-0.236 -0.660	9.214 10.510	-1.717 -1.913	
55.412	-8.47	$83.066 \\ 100.000$	- 54.0 - 49.8	4.935 5.211	-1.021 -1.078	13.294 14.439	-2.249 -2.375 -2.705	
				7.402	-1.441	17.790	-2.705	
Baud, 190	9							
	f.t,	%	f.t.	Pariselle,	1921			
	- 		-25.0	No hydrate	•			
5.2 11.2 16.0	- 0.5 - 1.1 - 1.75 - 2.15 - 2.5 - 3.0 - 4.0	70.0 71.4 74.3	-27.5 -31.0					
20.0 24.0	- 2.15 - 2.5	75.3	-32.0 -32.0	_				
30.4 37.5	- 3.0 - 4.0	75.8 79.0 81.0	-39.0 -45.0	Ewert, 193				
44.5 50.0 54.0	- 5.5 - 6.5 - 8.0	84.0 85.7	-60.0 -62.5 -54.5		mol %	f.t.	E	
59.4 65.1	-11.0 -15.5	89.5 93.0 97.0	-49.5 -42.0		10.0 20.0	- 2.9 - 9.0 -21.7	-	
67.7	-19.0	100.0	-38.0		30.0 40.0	-40.2	-36.4	
С	%		% <u>.</u>		50.0 60.0 70.0	-55.0 -59.2 -61.9	-	
	L	<u>C</u>	L		80.0 90.0	-54,7 -47.9	-76.0	
9.4 17.0	11.2 20.0	55.0 64.4	59.4 67.7	tr.t. = 3	5 % E = 56)	
21.2 34.6	24.0 37.5	69.0	70.0					==
Timmerman	ns, 1911				d Rayet, unpu			
%	f.t.	%	f.t.	?	mol	% 1 	f.t.	
0	0	62.80 -1	5.15 and ~15.35	0 12.1			0 2.20	
4.56 10.10	- 0.97 - 1.77	63.00 67.08	-15.3 -22.4	31. 38.	05 9.3	26 -	3.35 3.85	
15.37 20.37 26.09	- 2.40 - 2.92 - 3.12	73.20 (?) 76.55	-37.05	49. 59.	19 18. 1	- 10	4.80 6.90 12.60	
31.54 36.95	- 3.12 - 3.95 - 4.55	80.15 84.15 -5 87.43	-43.0 3.9 and -54.1	65. 73.	87 31.6 12 38.2	50 -] 26 -{	19.40 30,15	
42.48 47.66	- 5.37 - 6.85	90.09 95.10	-63.25 -57.2 -49.8	80.6 89.1	32 48.2 79 66.9	20 -4 20 -5	14.0 59.0	
52.52	- 8.15 -11.15 and -11.	100	-41.8	92.5 F.	52 73.8 87 % -66°		55.0	
					υν /υ -00°	tr.t, = -	-28 4°	

E: 87% -66° tr.t. = -28.4°

		D (1)		Dunstan and	Thole, 1908		
Properties	of phases . (Density)		g	d	%	d
Traube, 189	6			<u> </u>		% .5°	
%	<u>d</u>	<i>%</i>	d	0.0 4.98 10.01 15.09	0.9972 .9983 .9993 1.0002	35.49 37.67 40.18 45.03	1.0023 .0025 .0025 .0027
1.118 3.465 7.387	0.99946 1.00039 1.00159	18.034 35.929 100	1.00475 1.00799 0.98210	15.57 23.87 30.02 35.23	.0003 .0014 .0018 .0025	50.03 55.19 60.08 100.00	.0028 .0026 .0024 0.9763
Blanchard,	1904	ندر شد. الله المحافظة الدر الله المساحقة الله الله الله		Baud, 1909			
N	d	N	d	%	d	%	d
		1.545	0.0004	<u> </u>		, 0	
0.0 0.530 1.060	0.9971 0.9979 0.9987	2.538 4.73	0.9994 1.0004 1.0017	9.0 20.0 28.6 38.6	1.0055 .0114 .0148 .0184	66.0 70.4 80.8 90.0	1.0237 .0234 .0189 .0122
Dunstan, Th	ole and Hunt,	1907		50.3 62.0	.0217 .0237	94.0 100.0	.00 7 9 0.9999
%	đ	%	đ				
	_	5°		Schwers, 191	l 		
0.00 5.85	0.99717 .99754	55.12 59.98	1.00423 .00363	t	d	t	d
9.11 9.85 15.33 22.55 30.99 37.06	.99877 .99953 1.00119 .00187 .00242 .00267	61.46 64.99 70.03 75.01 79.80 87.96	.00282 .00295 .00235 .00027 0.99769 .99101	11.0 33.5 53.35	1.00324 0.99569 0.98579	63.2 73.1 2026 %	0.98027 0.97385
40.46 50.03	.00359	94.96 100.00	.98353 .97832	13.7 35.65 53.55	1.00579 0.99506 0.98405	62.1 73.0	0.97845 0.97054
Hartley, Th	omas and Appl	ebey, 1908		12.2	1.00852	.504 % 62.2	0.97659
 %	d	 %	d	33.6 52.85	0.99628 0.98346	72.2	0.96885
	2 5	 .08°	~	9.3	40. 1.01238	.4126 %	0.05242
0.00 9.91 19.28 29.99	0,99705 ,99953 1,00117 ,00234	59.70 70.34 80.15 90.08	1.00297 .00126 0.99694 .98870	34.9 53.45	0.99520 0.98112	62.8 74.0	0.97363 0.96410
39.84 49.57	.00314 .00347	95.01 100.00	.98311 .97721	14.0 34.0 54.9	1.00989 0.99279 0.97341	63.0 73.9	0.96544 0.95478
0.00 9.59 20.50 29.53 39.73	0.99987 1.00577 .01158 .01513 .01858	62.02 65.12 69.92 87.07 90.07	1.02352 .02359 .02343 .01967 .01191	12.7 33.0 53.55	1.00778 0.98905 0.96910	.836 % 62.8 74.0	0.95952 0.94802
49.84 59.16	.02163 .02317	100,00	.00127	9.2 33.1 53.45	1.00171 0.97805 0.95771	.0793 % 63.0 73.0	0.94782 0.93741
				9.3 33.8	0.98876 0.96355	55.55 74.8	0.94239 0.92268

WATER + PYRIDINE

Faust, 19	912					Faust, 1920			
mol %	0.0	250	đ	00-	100-		mol %	d	
	0°	25°	50°	80°	100°		22° 50	0.996	
0 10 20 30 50 70	0.9999 1.0160 .0214 .0234 .0179 .0109	0.9969 1.0024 .0033 .0019 0.9954 .9879	0.9879 .9884° .9850 .9811 .9732 .9649	0.9714 .9689 .9639 .9585 .9485 .9386	0.9572 .9549 .9489 .9435 .9322 .9207	Burrows, 19	927		
100	.0013	.9769	.9530	.9243	9049	%		%	<u></u>
Denison,	1912					0 11.74 37.84	0.99707 0.99987 1.00274	64.51 80.22 100	1.00232 0.99674 0.97705
9%	đ		%		đ				
	2.00	259		, ,	00822	Griffiths,	1952		
0 19.28	0.99	824	70.34 80.15	0.	99833 99802	Я	đ	×	đ
29.99 49.57 59.70	0.99 1.00 1.00	053	90.08		99577 9743	0 5.07 10.13	0.99706 0.99836 0.99938	57.46 59.38 66.49	1.00307 1.00280 1.00212
	and Cooke			778		19.86 25.54 30.05 35.58 42.00 50.21	1,00017 1,00161 1,00204 1,00253 1,00281 1,00326	75.06 82.03 86.02 89.38 94.08 100.00	0.99963 0.99611 0.99309 0.98975 0.98463 0.97800
t			t		d	30.21	1.00020		
0 25 40	1.022 1.000 0.987)74	% 55 70	0	.9733 .9588	Viscosity	and surface te	nsion .	:
Holmes, 1	01 8					Blanchard,	1904	N	
	d		%		d :		25		
%		15.	5°			0.0 0.530 1.060	895 1024 1177	1.545 2.538 4.73	1278 1554 2135
100.00 87.20 70.11	0.98' 1.00' 1.01	06	49.88 30.72 12.78	1,	0105 0078 0036	Dunetan T	hole and Hunt,	1907	
						Buistan, 1	η	%	η
Jones and	d Speakma	n, 1921				-	25		···
- %	d				d	0.00 5.85	891 934	55.12 59.98	2147.2 2200.4
100 90 80 70 60	0,977 ,988 ,997 1,001 ,002	25 76 88 79 18		0.	0029 0020 0008 9991 99971	9.11 9.85 15.33 22.55 30.99 37.06 40.46 50.03	1099.7 1109.7 1246.0 1402.7 1691.6 1788.6 1863.0 2051.5	61.46 64.99 70.03 75.01 79.80 87.96 94.96 100.00	2215.5 2243.8 2191.3 2115.1 1920.1 1442.4 1081.0 877.5
	ت هر دو متر متر دو می خوردی است	ر شدر شدر شدر شدر شدر شدر شدر شدر در شدر ش							

Hartley,	Thomas	and A	pplebey,					and Cool	ke, 1914	_		
*				%	T .	<u> </u>	t		n	t		
0.00 9.91 19.28 29.99 39.84 45.57 59.70 66.65]	890 1116 1336 1598 1833 2032 2187 2225	8 9 9 9 9	0.34 0.15 0.08 5.01 7.16 8.02 9.00 0.00	218 189 135 106 92 91	94 50 54 79 42 17	0 25 40		5730 2280 1469	55 70		1052 793
0.00		1778	0°		541		Hartley	, Thomas	and Appl	ebey, 19	08	
9.59 20.50 29.53 39.73	3	2447 3218 3840 4548	8 8	9.92 5.75 0.07 5.13 0.07	490 426 329 239	05 62 98		%	25	o	00	وجدواتك لدي شهر المرافقة شعر شدر شهر الد
49.84 59.16 62.02 65.12		5147 5521 5562 5560	9	5.11 7.84 0.00	172 146 132	29 63	·	0 4.92 10.20 30.22 40.00 49.27	71. 55. 52. 47. 46.	6 8 9 4	75.49 59.3 55.9 51.8 51.3 50.5	
Dunstan	and Tho	le, 19	08					60.16 79.73 89.80 100.00	45. 43. 41. 37.	8 7 0	49.6 47.4 44.5 40.15	
%		n		*	1	n					=======	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
0.00 4.98 10.01 15.09 15.57 23.87 30.02 35.23]]]	891 910 1135 1262 1270 1485 1620	3 4 4 5 5 6	5.49 7.67 0.18 5.03 0.03 5.19 0.08 0.00	177 183 189 200 210 219 228	30 84 05 06 94	Somogyi	, 1916 % 35.929	t 15		a ²	
Deni son,	, 1912							18.034 7.387 3.465 1.118	16 15 15 15	. 0 . 8 . 8	4 . 876 5 . 284 5 . 827 6 . 579	
%		η		%	1	n		mol	%	a ²		
39.84 59.7 66.7	- 2	1 833 21 87 2225	25°	70.3 80.1	218 189	86 94		0.5 0.2 0.1	5 25	5.72 6.22 6.60	0 0 0	
Faust, 1	912						Faust,	1926				
mol %)				mol		٥		·····
0 1	770 1	8.3° 030	25.1° 890	500	77°	280		50 1 0 0		47.60 38.23		
20 5 25 5 30 5 40 5 60 3 80 1	290 2 530 2 550 2 070 2 050 2 790 1 490 1	820 420 670 810 640 060 480 300 170	1670 2090 2180 2220 2070 1570 1090 950 880	810 970 1010 1010 1000 890 740 670 600	530 650 670 680 690 630 570 530 500	380 450 480 490 520 490 435 410 400						

Teitelbaum	, Ganelina	and Gortalo	va, 1951		Fryer I	P.Y. and	C.II., 1919			من ميومد ميامد اساري ساري
mol 9	f	đ			%	n _D	%	$^{\mathrm{n}}\!\mathrm{D}$	76 	n _D
0 1 3 5 10 20 40 60 80 100		0° 75 70 59.34 53.83 52.37 50.84 49.69 46.44 43.49 41.27 39.05 5° 20° 51 72.74	5° 74 96 58 88 53.06 51.61 50.23 49.00 45.71 42.80 40.58 38.43 25° 71.98	10° 74 27 58 19 52 45 50 76 49 46 48 32 45 10 42 04 39 89 37 82 30° 71 21	100 99 98 97 96 95 94 93 92 91 90 89	1.5136 .5128 .5119 .5109 .5088 .5077 .5065 .5053 .5041 .5028	65 64 63 61 60 59 57 56 55 54	°1.4635 .4616 .4597 .4577 .4557 .4537 .4516 .4496 .4475 .4454 .4434 .4434	32 31 30 29 28 27 26 25 24 23 22 21 20	1.3966 3947 3927 3907 3888 3868 3849 3829 3790 3770 3750 3731
1 3 5 10 20 40 60 80 100	57 51 50 48 47 44 41 39 37	.58 56.81 .68 50.84 .00 49.31 .70 47.86 .47 46.63 .26 43.57 .42 40.74 .20 38.51 .06 36.37 .5° 40°	55.97 50.08 48.54 47.09 45.86 42.96 40.05 37.82 35.68 45°	55,28 49,23 47,70 46,40 44,95 42,11 39,28 37,21 34,99 50°	87 86 85 84 83 82 81 80 79 78 77	.4988 .4974 .4960 .4945 .4930 .4915 .4900 .4884 .4867 .4833 .4816	53 52 51 50 49 48 47 46 45 44 43 42	.4375 .4356 .4337 .4317 .4297 .4277 .4258 .4239 .4219 .4210 .4181	19 18 17 16 15 14 13 12 11 10	.3712 .3692 .3672 .3652 .3632 .3632 .3592 .3572 .3552 .3532
0 1 3 5 10 20 40 60 80 100	54 48 46 45 41 38 36	.37 69.52 .75 54.13 .54 47.86 .94 46.17 .48 44.79 .26 43.57 .42 40.66 .59 37.82 .60 35.83 .38 33.77	68 76 53.44 47 09 45.41 44.03 42.73 39.82 37.21 35.14 33.00	67 92 52 83 46 32 44 72 43 34 41 88 39 13 36 52 34 46 32 31	75 74 73 72 71 70 69 68 67	.4799 .4782 .4764 .4746 .4728 .4710 .4692 .4673 .4654	41 40 39 38 37 36 35 34 33	.4142 .4123 .4103 .4084 .4064 .4045 .4025 .4005 .3986	8 7 6 5 4 3 2 1 0	.3492 .3473 .3454 .3435 .3416 .3397 .3378 .3359 .3341
Optical and		l properties	and the	rma l	Ibl, D	" an d liker	and Trumpl	ler, 1954		
					mo 1%		n _D	mo1%		n _D
Zawidzki, 19	n _D	%		n_			50°			401/
100 96.14 91.39 81.43 71.50 60.36	1.50677 .50137 .49475 .47976 .46295 .44306		. 4	ⁿ D 42591 40874 38981 37122 35433 33266	0 1.1 3.6 7.4 14.6 22.4 32.7 43.0		1, 3331 .3411 .3591 .3808 .4123 .4363 .4587 .4745	49.4 58.2 68.9 80.2 83.9 88.5 93.2 100	•	4816 4891 49614 50192 50359 50544 50723 50954
Baud, 1909					0 1.1 2.4 5.0 8.7) ,	1.3331 .3432 .3510 .3675 .3876	41.7 48.9 58.6 68.7 76.5]	.4728 .4800 .4894 .49596 .50015
%	ⁿ D	%	n _D		13.7 20.0)	.4090 .4300	82.0 94.7 100		.50271 .50770 .50954
0.0 20.0 28.6 38.6 50.3 62.0	1.3335 .3707 .3882 .4052 .4271 .4470	66.0 70.4 80.8 90.0 100.0	.49	574 662 828 971	26.8 34.0		.4468 .4608	100		

Hartle	y, Thomas and	Applebey, 1908		Ghosh, 19	20		
mol %	и	mol %	ж		%	0 ο ε	18°
	0° 25		0° 25°				10-
0.00 5.91	0.015 0.0 .046 .0	95 72 74	0.003 0.006 .006 .007		100 96.0 92.5 80.0	12.5 13.0	12.5 16.0
14.47 31.28	.018 .0	57 81.27 41 83.98 23 89.75 12 100.00	.005 .009 .004 .006			13.0 15.3 22.9 27.7	21.0 25.1
40.64 46.67 54.35	.011 .0 .007 .0 .011 .0	12 100.00 12 12 100.00	.003 .004		60.0 40.0 20.0	40.0	37.0 52.2
=====	.011 .0				20,0	68.3	64.1
						ی سی میں جین جین میں میں بید حض بعث میں میں ہ	
	nov and Ust-Ka	chkintsev, 1948		Trew and	Spencer, 1931		
mol ⅓ a	fter 1 day	14 days 30 day	s 60 days	mol %		mol %	х
		0°	هذا الله الحد الحد الحد الحد الحد الحد الحد الحد			15°	
0 2.5	0.0212 .155 .168	0.0228 0.0235 .205 .372	.389	0 10	$\begin{array}{c} -0.72 \\ -0.625 \end{array}$	60 70	-0.66 -0.725
5.0 7.5 10.0	. 168 . 135 . 102	.255 .430 .185 .344 .171 .231	.455 .358	20 30	-0.55 -0.55	80 90	-0.765 -0.815
10.0 12.0 14.0	- 086	0.194	.271 .245	40 50	-0.575 -0.615	100	-0.85
15.0 16.0	.060 .0854	.166 0.210	.194 .218 .214				
18.0 20.0	.077 .070 .060	- 0.104 0.126	. 188 . 154				
25.0 30.0	.053	.083 .096 .061 .079	. 102 . 087	Baud, 190)9		
35.0 40.0	.041 .036 .053	.061 .075 .075 .084 .062 .078	.084 .085 .080	%	Q dil (by 100)g) %	Q dil (by 100g)
42.5 45.0	.045 .037	.050 .060	.063	20	0.28	12-13° 68	1.31
47.5 50.0 55.0	.041	.055 .064 .064 .067 .051 .056	.068 .071	30 4√	0.43 0.60	69 70	1.36 1.40
60.0 65.0	.043 .024	.031 .034	.053	50 60	0.83 1.06	80 90	1.92 2.64
70.0 75.0	.024 .029 .025	.028 .031 .0251 .0342 .0223 .0286	.031 .036 .0306	66	1.24		
80.0 85.0	.0176	0221 0212	.0275		%	Q m	
90.0 95.0	.0198 .0176 .0156 .0137 .0076 .0025	.0182 .0202 .0160 .0173 .0082 .0098	.018	 		100g.	100cc
100.0	.0025	1,50,0	-		20 12°-13° 30	0.434 0.641	0.439 0.651
mol %	х	mol ≸	х		40 50	0.828 0.955 1.082	0.844 0.976
	25° 50°	·	25° 50°		60 66	1.082 1.116 1.1176	1.107 1.1425
0 2.5	0.046 0.061 .942 1.501 1.154 .885	42.5 0 1 45.0	. 151 0. 234 . 124 . 196		68 69 70	1 102	1.144 1.129
2.5 5.0 7.5	0.896 .454	1 50.0	. 124 . 196 . 132 . 205 . 138 . 213		70 80 90	1.099 0.936 0.573	1.125 0.954 0.580
$\begin{array}{c} 10.0 \\ 12.0 \end{array}$.669 .140 .572 0.944	55.0 60.0	.098 .149 .063 .095		90	0.573	0.580
14.0 15.0	.427 .677 .508 .785	7 65.0 70.0	.0493 .0725 .0577 .0832				
16.0 18.0	.504 .777 .432 .658	75.0 80.0	.0470 .0670 . 0418 .0508				
20.0 25.0 30.0	.348 .558 .230 .356 .195 .328		.0298 .0408 .0243 .0295				
35.0 40.0	.195 .328 .181 .300 .177 .280	100.0	.0118 .0133 0031				
=======================================			, من مواد مد امد مواد امد مواد مواد مواد امد المواد المواد المواد المواد المواد المواد المواد المواد المواد ال , وقد من من من المواد المو				
				<u> </u>			

Water + α−	Picoline (C ₆ H	₇ N)		Water + β -Picoline (C_6H_7N)
	Speakman, 1921			Jones and Speakman, 1921
Jones and .	Λz			Az
	p	b . t .		p b.t.
	753	93.5		768 96.2
	653 5 72 .5	89.5 86.4		596 89.6 450 82.2
	401.5 194	77.5 61.5		425.5 80.8 270 70.0
d Az = 0.9	99318 at 25° a	nd 52 %		d Az = 0.99247 at 25° and 39 ≸
Dunstan, T	hole and Hunt,	1907		Herington, 1951
76	đ	%	ð	Az
		5°		p % b.t.
0.00 10.28	0.99717 .99723	68. 67 89.59	0.98842 .95550	700 61.4 94.1 - 94.3
23.05 49.51	.996 78 .995 2 3	100.00	94099	760 61 96.8
	.,,,,,,,,			
	Speakman, 192			Flaschner, 1909
	<u>d</u>	%	<u>d</u>	% sat.t. lower higher
100	0.940 <u>4</u>	5° 40	0.9952	59.7 83.5 133.3
90 80	. 963 7 . 97 8 7	30 20	, 9960 , 9965	52.3 63.3 146.5 42.3 53.7 151.0
7 0 60	.9867 .9911	$^{10}_{0}$.996 8 .99 7 1	35.5 51.4 152.0 26.4 49.4 152.5
50	.9936			16.4 54.5 140.0 12.7 61.0 125.7
X	sat.t.	%	sat.t.	
15.99	150	55.11	27.2	
23.14 30.92	150 68.5	67.96 79.54	23.0 23.0	Dunstan, Thole and Hunt, 1907
37.50 45.14	53.0 39.0	93.00 95.06	35.0 54.3	& d
Lower C.S	S.T. = 22.5	84 %		25°
=======================================				0.00 0.99717 10.00 .99617
Dunstan, Th	ole and Hunt,	1907		19.80 .98981 68.55 .98396
# # # # # # # # # # # # # # # # # # #		 %		88.71 . 96348 100.00 . 93895
	n	 5°	^η	
0.00 10.28	891 1206.6	68.67 89.59	3165.6 1736.2	
10.28 23.05 49.51	1710.6	89.59 100.00	1736.2 791.89	
49.51	2778. 9		. هم است	
	حمد سے سے خصر شدہ شدہ اس است شدہ شاہد کا کا است سے سے سے سے است شدہ شاہد کا است سے سے سے سے سے سے سے سے سے سے سرپر سے اسم شدہ شدم شدہ شدہ شدہ سے قد قدید سے قائد شدہ شدہ شدہ شدہ شدہ شدہ شدہ شدہ شدہ شد			

Jones and	Speakman, 1	921	
×	đ	%	d
		25°	
100	0.9515	40	0.9924
90 80	. 9675 . 9778	30 20	. 9938 . 995 0
70	. 9845	10	.9962
60 50	. 98 81 . 990 5	0	. 997 1
Dunstan,	Thole and Hu	ınt, 1907	
	\$	n_	
	0.00	891	
	$0.00 \\ 10.00 \\ 10.80$	1202.	4
	19.80 68.55 88.7 1	3291	2
	88.71 100.00	1604 3291 1971 872	7
	100.00	0/2.	
Water + 7	-Picoline (C ₆ H ₇ N)	
		Az	
	p	%	b.t.
	700	36.5 94	6 - 94 8
	760 760	- 74	.6 - 94.8 97.2
Water + 2-F	Ethylpyridin	e (C ₇ H ₉ N)	
Com 1054			
Cox, 1954			
	K	sat.	t.
		lower	higher
	88	105	105
	85	50	160
	75 65	15 5 - 3	205 2 2 5
	65 55	- 3	230

Water + 4-Ethylpyridine	· (CaHaN	<u> </u>			
	; (6711911	,			
Cox, 1954					
Z		at.t.			
······	lower	higher			
80	90	90			
70 60	15 - 5	160 175			
50 40	-15 -20	180 180			
30 20	-21	180			
20 10	-20 -15	178 170			
8	+50	50			
Water + 2,3_Lutidine (C ₇ H ₉ N)				
Cox, 1954					
%	sat	t.t.			
	lower	higher			
74	110	110			
65 60	50	175			
60 50	40 25	185 190			
40	20 18	195 194			
30 20	18	185			
10 5	20 80	155 80			
Water + 2,4-Lutidine (C_7H_9N) Kortum and Hang, 1956					
mol %		р			
L V					
100 100	71.5°	42			
74.2 20.10 48.45 10.76		164 235			
38 37 9 N7		235 253			
24.19 7.42 16.52 7.27		260 260			
16.52 7.27 7.35 7.25 2.40 7.50		258			
24.19 7.42 16.52 7.27 7.35 7.25 2.40 7.50 0.0 0.0		261 247			

Andon av	nd Cox, 1952			mol %	n _D	mol %	n _D
Andon at	%	sat.1	higher	100.0 66.05 47.39 33.05	1.50086 .49575 .48695 .47192	15.88 10.10 0.87 0.20	1,43268 .40843 .34240 .33507
	70 67.5 60 52.5 45	120 75 50 35	120 160 180 187	23.93	.45559	0.0	.33296
	35	28 25 24 27	188 188	mol %	Q mix	mo1 %	Q mix
	25 15 10 7.5 6	24 27 30 35 65	187 177 152 145 65	91.32 77.41 57.13 38.44 25.79	-105 -292 -424 -512 -393	21.24 12.97 7.00 5.50 1.63	-352 -250 -160 -122 - 48.6
Kortum a	nd Hang, 1956			92.57 74.31 48.12 29.81 16.57	- 68.9 -198 -251 -212 -141	8.00 1.45 0.57 0.55	- 89.2 - 25.6 - 9.8 - 9.6
	mol %	sat.t				.5°	
	22.81 16.31 7.92 7.24 5.40 2.09	58 1 37 4 23 0 22 8 22 5 25 8		84.93 75.65 51.47 42.53 26.67	- 81.5 -136 -165 -155 -132	9.66 3.56 2.79 1.73 0.43	- 68.3 - 30.1 - 22.5 - 12.5 - 0.8
mol %	0.93 molar	25.8 51.6 mol %	molar	41.80 4.30	+104 + 17.0	4.27	+ 16.1
	volume		volume				
100.00 87.48 66.84 49.79 30.96	114.99 102.24 81.505 64.700 46.621	27.05 20.09 5.92 1.04 0.00	42,949 36,455 23,450 18,989 18,048	Water + 2,5-I	outidine (C ₇ H	₉ N)	
100.00 87.48	117.83 104.79	21.06 11.57	38.201 29.163	9		sat.t.	
72.47 49.79 36.93	89.318 66.348 53.581	1.04 0.00	19.169 18.194	77	7.5	120 120	
30.73		1.5°		75 70	i)	75 155 50 182	
100.00 87.82 72.47 50.21 36.93	120.92 107.96 91.763 68.583 55.117	21.06 7.54 2.29 0.54	39. 237 25, 881 20.698 18.973	60 50 40 35 25 15		28 200 19 206 15 207 15 207 14 206 15 190	
	mol %	f.t.			.5	17 173 70 70	
	66. 05 57.53 47.39 33.05 10.10 0.70 0.00	-36 -23 -13 - 5.0 - 0.3 - 0.1 0.0					

Water + 2,6-Lutidine (C_7H_9N)

Herington, 1951

Az	р	Я	& b.t.	
	700 760	48.5	93.3 - 93.5 95.6	

Andon and Cox, 1952

#	sat.t.	
	lower	higher
82.5	130	130
80	90	180
75	70	202
60	44	226
50	36	230
40	35	231
35	70 44 36 35 35	230
40 35 25	35	226
20	35	222
10	43	184
5	43 53	140
4	90	90

Flaschner, 1909

%	sat.t	
	lower	higher
79.1 66.9 54.8 46.4 40.6 33.8 27.2 18.1 12.1 9.5	92.2 59.3 50.2 47.7 45.4 C.S.T. 45.3 48.1 57.7 74.5	130.5 157.0 161.6 C.S.T. 163.4 " 164.9 164.0 153.5 132.7 105.0

Coulson and Jones, 1946

%	sat.t.	Я	sat.t.
12	38	36	34
15	35.5	45	35.8
20	34.1	54	40
28	33.9	58	42.8

Cox and Herington, 1956

%		sat.t.	
 wt	mol		
20.84 22.69	4.24 4.70	34.34 34.19	
25.38 27.63	5.41 6.03	34.105 34.075	
29.75 31.49	6.65 7.17	34.06 34.095	
33.59 35.87	7.84 8.60	34.12 34.23	
36.78 38.02	8.91 9.35	34.28 34.41	

Water + 3,4- Lutidine (C_7H_9N)

Cox, 1954

Я	sat	.t.
	lower	higher
68	90	90
68 60 50 40 30 20	30	150
50	10	160 165 162 158
40	0	165
30	-5	162
20	-5	158
10	0	140
5	+55	55

		***			COLLIDINE					
Water + C	ollidine (C	S ₈ H ₁₁ N)			t	95.8°	p 98.7°	100°		
Timmerman	s and Kohnst	tamm, 19 07			10	-	-	2.7		
C.S.T. =	1.3 Limits	s of P (1-	.200 kg/c	cm²)	15 20 25 30 35 40	10.4 14.3 19.3 26.6	7.9 10.9 15.1 20.8	3.3 4.1 5.2 6.3		
dt/dp ≈ +	0.0045				35 40	36.1 49.0	28.7 38.1	6.3 7.7 9.4		
	·				45 50 55 60	65.6 85.8	50.5 67.2 87.4	11.7 14.8		
Merzlin,	1935				55 60	111.5	87.4	18.9 23.8		
%	đ	%		đ	65	<u>-</u>	<u>-</u>	31.0		
	0.9302	15°		0.000	D - +13	1000				=
100	.9424 .9523	43 30	.1 .03 .14	0.9698 .9797	Rothmund,	1898				
64.79	. 7025		.14	.9987	.	%	lower	. sat.t	higher	
%	n	*		η	.	1.75 2.16	54.25		108.0	
100	111.10	15°	1	588.6		2.73 4.18	36.32 28.02 17.10	7	137.1 153.8	
80 64,79	187.02 294.00	43. 30. 0.	03	788.8 116.0		4.78 6.71	15.10 11.07)	190	
	274.00				.∥ ,	8.58 3.76	8.97 6.95	7	-	
mol %	0°	თ 30°	60°	80°	2	21.18 33.16	6.42	2	-	
	·———				. 4	5.97 5.82	7.22 12.68	3	-	
100	34.75 35.89	$\frac{31.20}{32.07}$	27.82 28.35 28.67	25.67 26.09		50.95 58.12	21.15 27.30 37.27)	-	
64.79 50	36.88 38.48	33.14 34.40	29.44	26.25	11 7	74.97 35.22	49.10 76.85)	195 173	
43.1 30.03	38.60 39.70	34.82 35.73	29.7 -	26.97	8	87.29 87.60	83.75	;	164	
17.3	40.81	-	-	-			95.50	' =	162.7	
					Water + 0	uinoline (C.HN.)			
Water + 2	,4,6_Collidi	ne (C ₈ H ₁₁	N)			(C911711)			
Lattey, 1					Schwers,	1911				
					- t	đ	t		đ	
t	6°	52.90°	58.68°	85.74°			95.5024 %			
10					7.9 34.1	1.10461 .08389	61		1.06080 .05052	
10 15	9.1 12.7	9.8 13.0	13.1	-	53.5	.06771	. 95		.03225	
20 25	18.2	17.6	17.85	17.5	10.7	1,10260	89.4406 % 61	.0	1.06107	
25 30	24.6 33.1	24.2 32.3	24.1 32.3	14.4 32.9	32.2 52.1	.08560 .06873	70	.9	.05281	
35 40 45	44.2 57.7	43.4 56.3	42.9 56.45	43.2 57.0			82.3409 %		. 20-00	
45 50	74.8 96.4	74.1 95.2	73.6 95.0	74.8	8.8 32.7	1.10101 .08118		. 85	1.06424	
55	$\frac{122.3}{L_1 + L_2}$	120.9	121.9	124.0			100 %			
	1 -2			1	8.2 32.1	1.10255 .08407		.5	1.06725 .05090	
									103070	
										ľ
					R					,

Water + Hexamethylene-imine ($C_6H_{13}N$)

Silberman and Skorikova, 1953

t	L ₁	[%] L ₂	
66.9 C.S.T. 70 80 90 100 110 120 130 140-160 170 180 190 200 210 228 C.S.T.	22.5 36.8 49.5 57.4 65.5 678.9 70.3 70.3 70.0 68.5 53.0 53.5	22.5 10.0 6.8 5.7 5.7 5.7 5.7 5.7 5.8 6.8 9.8 15.5 23.9 39.5	

Water + Hexamethylene tetramine ($C_6H_{1,2}N_4$)

Evrard, 1929

%	f.t.	%	f.t.
3.71	- 0.56	23.0	- 5.70
5.80	- 0.90	27.6	- 8.00
10.5	- 1.80	28.8	- 8.30
19.8	- 4.00	29.8	- 9.00
	Hydra	te	
30.5	- 6.0	42.0	+ 9.2
30.8	- 5.0	43.3	+10.8
34.8	0.0	45.0	+12.0
40.5	+ 7.0	46.8	+13.0
	Amin	ie	
47.3	- 4.0	46.2	+40.0
47.2	- 1.0	46.0	+49.0
47.0	+ 7.0	45.7	+65.0
46.8	+13.0	45.6	+85.0
46.5	+16.0	46.0	+95.0
46.5	+20.0	46.3	+100.0
	Retrograde	solubility	
46.8	110.0	50.0	145.0
47.4	115.0	51.0	150.0
48.6	130.0	52.5	165.0

Water + Nicotine ($C_{10}H_{14}N_2$)

Heterogeneous equilibria

Schukarew, 1910

%	р	%	p
	59	.6°	
17.22 26.71 48.90 49.46	137.5 133.4 131.5 132.6	59.20 60.46 72.28 82.10	135.7 130.0(sic) 138.1 132.1

Higher C.S.T. = 210°

Lower C.S.T. = 60°

Norton,	Bigelow	and	Vincent,	1940

, 5			
mol %	p ₂	Pı	
	2 5°		
0.000 0.108 0.186 0.281 0.648 1.318 2.00 4.00 5.00 9.80 12.60 26.65 33.28 40.30 47.95 55.90 61.55 65.23 68.89 79.45 80.50 82.10 82.40 82.40 84.30 85.55 87.80 89.16 91.95 92.19 92.70 94.80 95.60 96.20 96.90 97.50 98.07 98.82	25° 0.00 0.35 0.45 0.49 1.00 2.27 3.41 4.42 5.7 8.8 9.3 10.5 112.5 13.8 15.3 15.4 19.6 21.7 22.1 22.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7	23.61 23.32 23.10 22.86 23.12 23.02 22.88 22.25 22.00 21.69 20.30 19.55 19.50 19.33 11.32 11.33 11.42 12.72 13.04 11.73 11.42 10.27 8.38 5.71 4.39	
99.60 100.00	40.2 42.5	3.09 0.00	

Fowler, 1950			Fowler, 1950)			
b.t.	% L	v	% L	v	<u></u>	% L	v
67.6 59.95 55.3	98.0 92.8 90.5 76.5 76.0 67.7 67.5	5.06 3.82 2.51 2.20 2.24 1.72 1.65	2.48 2.80 2.52 2.22 1.94 1.79	2.45 2.35 2.15 1.99 1.84 1.71	624 mm	1.51 1.28 1.10 0.72 0.20	1.50 1.30 1.12 0.80 0.25
54.4 - 54.3 - 53.8	67.5 57.9 55.5 50.8 42.6 38.9 35.4 27.5 22.3	1.43 1.45 1.41 1.32 1.31 1.32 1.30	2.80 2.35 2.05 1.51 0.92	2.20 1.98 1.81 1.41 0.93	572 mm 478 mm	0.80 0.49 0.30 0.20	0.84 0.53 0.34 0.23
53.8	19.9 16.4 13.4 8.75 7.20 6.10 3.98 2.79	1.31 1.29 1.26 1.25 1.12 1.07 0.88 0.69	3.60 3.14 2.98 2.62 2.21 1.87 1.54 1.45	2.33 2.20 2.12 1.93 1.74 1.50 1.29	4/6 1011	1.30 1.10 0.98 0.76 0.61 0.53 0.43 0.27	1.12 0.96 0.88 0.72 0.58 0.50 0.40 0.24
b, t.	K L	v	Hudson, 1904				
206 166.0 107.8 104.0 102.5 100.1 100.1 100.1 100.1 100.0 99.95 	760 mm 97.5 95.0 89.0 86.2 85.7 80.6 80.6 74.1 64.4 11.7 6.15 5.55 4.62 4.27 4.20 3.91 3.39 2.87 2.58 2.33 2.06 1.67 1.54 1.39 1.24 1.02 0.92 0.82 0.47 0.47 0.48 0.47	40.2 18.50 6.87 5.30 4.60 4.31 4.25 4.30 4.20 4.20 4.0 3.92 3.50 3.44 3.33 3.40 2.56 2.40 2.16 1.94 1.81 1.63 1.46 1.26 1.10 0.88 0.62 0.54 0.35	6710143249668082	8 0 8 2 0 8 2 0 0 909	10wer 94 89 75 65 61 64 72 87 129 10wer 92.7 64.3 60.8 62.7 71.8 75.8 86.1	higher 95 155 200 210 205 190 170 130 at.t. higher - 94.5 195 208 204 194 185 168	
100.0	0.20 0.15 0	0.35 0.26 0.20 0	Timmermans a C.S.T. = 61. dt/dp = +0.0	3 Limit	tamm, 1907		cm²)

				Tsakalotos	, 1909		
Properti	es of phases			%	d	%	d
Landolt,	1876 - 1877			0	0.9983 1.0233	73.9	1.0414
%	đ	%	đ	33.4	.0342	79.2 86.1	.0390
100	1.01101	20° 34.2854	1.02282	66.7 71.7	.0402 .0417	100	.0091
89.9155	.02671 .03528	34.2854 17.6793 16.3356	.01158		ن الله الله الله الله الله الله الله الل		
78.3920 65.9872 53.4750 35.1969	. 04010 . 03649 . 02421	8.9731 0	. 00469 0. 99823	Jephcott,	1919		
				%	đ	\$	đ
Gennari,	1896			100	1,00925	41.718	1.02790
%	đ	%	ð	95.068 91.084	.01823 .02458	40.237 38.798	.02661 .02592
0 34.395	0.99823 1.02325	66.902 100	1.04146 1.01071	89.471 88.338 83.336 81.842 77.006 75,538	.02583 .02810 .03356 .03439 .03784 .03836	38.065 37.986 35.098 34.877 32.141 30.973	.02522 .02538 .02341 .02351 .02107
D		100=		ll 74.868	.03839	30.637 30.296 28.151	.02048 .02010 .02060
	and Hucksmann,			69.202 67.538 64.423	.03988 .03840	28,151 26,473	.01820 .01725
%	<u> </u>	*	d	63.950	.03894 .03846	24.975 20.963	.01588
100 86,889	1.0095	20° 35.579	1.0238	59.898 59.649	.03728 .03765	20.726 15.023	.01299
75.131 72.665	. 0299 . 0394 . 0398	20.746 10.191 9.099	.0132 .0054	56.241 54.289	.03614	12.963 11.508	.00492 .00611
71.315 69.117	.0399	8.167 6.340	. 0046 . 0037	53.096 52.969 50.134	.03463 .03428	$\frac{10.012}{9.921}$.00611
69.534	.0397	4.733 2.545	.0026 .0015 .0000	50.134 48.949 46.632	.03278 .03194	7.417 6.604	.00317 .00276
64.921 62.812 59.653	.0391	1.049 0.6175	0.9990 .998 7	46.183	.03065 .03131	4.998 2.505	.00153 0.99970
55.401 49.301	.0364	0	9982	46.015 44.004	.03037 .02936	0	.99823
				t	đ	t	đ
Winther,	1907			6.	638 %	88.33	38 %
<u> </u>		d		20 85	1.00275 0.96328	20 90	1.02810 0.98412
78	0° 10°	a 20° 30°	40°				
51.48	1.0250 1.0180 .04 7 9 .0410	.0337 .026	2 1.0181	Binchinet	ti, 1920		
41,15 14,15	.0390 .0332 .0130 .0113	. 0083 . 004	9 .0137 5 .0002	8		d	
6.96	.0061 .0053	. 0031 , 000	1 0.9962		0° 10°	20° 30)° 40°
				15.82 35.13	1.0148 1.0128 .0342 .0296	1.0048 1.0 .0241 .0	0058 1.0012 0181 .0118
				51.60 60.07	.0507 .0442 .0558 .0486	.0367 .0	0299 .0210 0316 .0230
				69.88 83.66	.0577 .0496 .0517 .0430	.0402 .0	0310 .0213
				93.64	.0340 .0304 .0258 .0175	.0218 .0	0245 .0150 0133 .0049 0014 0.9935
				11			

Sata, 1	927 	ر سن مايم مين شعد المداعد مدر مدمات النام النام عبد المداعد النام الدار	- <i>-</i>		Tsakalotos,	1909		
¥	00-	d			%	η		n
0 10 20 30 40	30° 0.99567 1.00234 .00888 .01513 .02118	40° 50° 0.99225 0.98° .99856 .99° 1.00410 .99° .00953 1.00° .01449 .00° .01903 .010°	307 - 453 0.98 386 .99 381 .99	968 353 7 55 065	0 33.4 49.6 66.7 71.7	1002 4637 10950 25630 32720	0° 73.9 79.2 86.1 100	34480 35270 28470 4536
50 60 70 80 90 100	.02646 .03023 .03101 .02788 .01773 .00124	.01903 .010 .02156 .011 .02228 .011 .01830 .000 .00979 .000 0.99383 0.980	033 .00 280 .00 247 .00 875 0.99 132 .99 530 .97	407 406 9 7 9	Seyer and (Gallaugher, 193	30	
=======		. بعد الله الله الله الله الله الله الله الل			t	σ	t	σ
Seyer a	and Gallaug	gher, 1930 t d	t	<u></u>	0.09 6.20 10.30 20.80 29.70	5.06 57.13 55.25 54.39 52.14 47.91	52.10 60.53 70.30 79.97 90.27	41.85 38.94 37.11 34.84 33.54
		5.06 %			29.70 41.50	43.65	95.40	32.30
0.09 3.10 6.20 10.20 10.30 20.20 20.80 29.70	1.0029 .0027 .0025 .0024 .0021 .0002 .0003	29.90 0.9975 40.10 9939 41.50 9940 51.20 9894 52.10 9893 60.50 9847 60.53 9845	70.30 70.80 75.40 79.60 79.97 90.27 95.40	0.9793 .9793 .9768 .9741 .9740 .9685 .9685	0.41 7.82 14.85 19.67 25.27	13.20 48.83 48.12 47.23 46.41 46.06 26.01	30.46 35.60 44.92 60.00	45.31 44.73 42.88 39.52
1.00 10.27 19.80	1 0070 .0058 .0036	9.18 \$\\ 30.70 1.0003 \\ 40.30 0.9967 \\ 50.60 .9919	59.70 69.80	0.9 87 3 ,9817	0.24 7.70 19.90 24.80	51,55 50,34 47,54 46,73 35,42	30.56 35.30 46.20 55.86	45.68 44.92 42.13 40.06
0.40 0.41 7.82 10.30 14.85 19.67	1.0193 .0192 .0172 .0163 .0147	13.20 % 19.90 1.0127 25.27 .0104 29.30 .0082 30.46 .0080 35.60 .0056	40.20 44.92 50.60 60.00 61.40	1.0031 .0007 0.9970 .9953 .9905	1.88 11.17 15.50 19.75 25.62	46.77 46.85 46.48 45.99 45.00	29.75 34.76 39.55 51.20 61.20	44.00 42.13 41.35 39.62 37.96
0.24 1.05 7.70 10.20 19.90	1.0314 .0313 .0284 .0268 .0223	26.01 % 20.00 1.0216 24.80 .0195 30.40 .0156 30.56 .0157 35.30 .0130	39.80 46.20 50.30 55.86 60.45	1.0095 .0055 .0026 0.9982 .9951	0.42 5.50 10.20 19.85 25.02 29.17	47.37 46.75 45.88 44.29 43.30 42.65	34.97 40.30 50.45 60.00 69.65 75.05	41.77 40.90 39.67 38.49 37.10 36.58
0.40 1.88 10.20 11.17 15.50 19.75	1.0474 .0467 .0403 .0403 .0370 .0335	35.42 % 20.00 1.0330 25.62 .0291 29.75 .0257 29.80 .0252 34.76 .0218 39.55 .0172	40 . 20 50 . 40 51 . 20 61 . 20 62 . 70	1.0167 .0079 .0070 0.9985 .9974	Landolt, 1	1876 - 1877		n _D
	. 5560	41.91 %						
0.42 1.00 5.50 9.80 10.20 19.40 19.85	1.0540 0534 .0500 .0462 .0462 .0376 .0374	25.02 1.0327 29.17 .0288 30.10 .0280 34.97 .0236 40.10 .0191 40.30 .0185 50.10 .0100	50 45 60 00 60 20 69 65 70 00 75 05 75 90	1 0091 0002 0006 0 9914 9914 9862 9856	100 89,9155 78,3920 65,8972 53,4750 35,1969	1.52828 .51523 .49700 .47246 .40692 .40228	34.2854 17.6793 16.3356 8.9731	1,37686 ,36685 ,35156 ,33451 ,33298
							. بن من من من من الله في الله الله الله الله الله الله الله الل	پولون نے کیے کی کار ادارہ اور اس نے موادی اور اور اس کے اس اس اور اور اور اس کا اس کے اس کا اس کا اس کا اس کا

\$ t	Levi, 1905	Tsakalotos, 1909
Section	% t ⁿ D	
44.54	88.66 24.8 .51215 79.65 25.4 .49724 73.04 24.6 .48552 66.78 24.5 .47277 63.30 24.0 .46602	0 1.3329 79.2 1.5009 33.4 .4032 8 6.1 .5086
100	44.54 24.4 .42576 37.46 23.0 .41073 30.08 25.5 .39472 24.17 22.5 .38327 14.92 23.9 .36321	β (α) _D β (α) _D
15° 100 1.5300 66 1.4765 32 1.4018 99 .5993 65 4743 31 3997 98 .5285 64 4721 30 3997 96 .5286 62 4677 28 3933 95 .5255 61 4565 27 3911 94 .5244 60 4633 26 3889 92 .5219 58 4589 24 3846 91 .5206 57 4567 23 3868 92 .519 58 4589 24 3846 91 .5206 57 4567 23 3803 89 .5179 55 4533 21 3781 87 .5150 53 4479 19 3738 88 .5165 54 4501 20 3760 88 .5134 52 4457 18 3717 87 .5150 53 4479 19 3738 88 .5165 54 4501 20 3760 88 .5134 52 4457 18 3717 87 .5150 53 4479 19 3738 88 .5165 54 4501 30 3768 88 .5165 54 4501 30 3768 88 .5165 54 4501 30 3768 86 .5134 52 4457 18 3717 87 .5150 53 4479 19 3738 88 .5183 51 4435 17 3695 88 .5016 49 4391 15 3652 88 .5069 48 4339 15 3652 89 .5099 48 4330 11 3567 88 .5001 44 4215 7 3695 78 .5001 44 4215 7 3483 79 .5018 45 4303 11 3567 77 .4984 43 4249 9 35525 76 .4967 42 4237 8 3504 77 .4984 43 4249 9 35535 77 .4984 43 4249 9 35525 77 .4984 33 .4049 19 3738 78 .5001 44 4215 7 3483 79 .5018 45 4303 11 3567 78 .5018 45 4303 11 3567 78 .5018 45 4303 11 3567 79 .5018 45 4303 11 3567 79 .5018 45 4303 11 3567 79 .4984 33 .4249 9 3525 70 .4983 38 .4149 4 3422 70 .4852 36 .4055 2 3382 79 .5018 45 4303 11 3567 70 .4984 33 .4249 9 3525 71 .4984 33 .4249 9 3525 72 .4893 38 .4149 4 3422 72 .685 -100.27 9.099 -77.55 71 .4873 37 .4127 3 3403 75 .1311 -103.75 10.191 -77.55 71 .4873 37 .4127 3 33402 72 .4893 38 .4149 4 3422 72 .685 -100.27 9.099 -77.56 71 .4873 37 .4061 0 3341 64.917 -99.18 6.340 -77.54 68 .4899 34 .4061 0 3341 64.917 -99.18 6.340 -77.54 68 .4899 34 .4061 0 3341 64.917 -99.18 6.340 -77.54 67 .4787 33 .4039	Fryer P.Y. and C.H., 1919	100 161.55 24.2054 - 00.70
100	% n _D % n _D % n _D	
69	100 1.5300 66 1.4765 32 1.4018 99 .5293 65 .4743 31 3997	Red Yellow Violet Pale Dark (D) blue blue 20° 34.395 - 59.49 - 80.18 -103.31 -126.73 -160.25 66.902 - 70.52 - 94.61 -121.62 -146.42 -178.11 100 -123.37 -162.84 -209.78 -250.71 -317.79
69	81 .5052 47 .4347 13 .3609 80 .5035 46 .4325 12 .3588 79 5018 45 .4303 11 .3567	ہے ہے کہ اب کے سر خو میں فید اس انداز میں اس خو شو کیا اس میں اس میں اس اس کے اس اس اس میں اس اس میں اس
	69 .4831 35 .4083 1 .3362 68 .4809 34 .4061 0 .3341	20° 100.00 -164.91 35.579 -82.17 86.889 -129.19 20.746 -79.08 75.131 -103.75 10.191 -77.55 72.665 -100.27 9.099 -77.56 71.315 -101.60 8.167 -77.44 69.117 -99.13 6.340 -77.54 69.534 -97.79 4.733 -77.34 64.921 -95.21 2.545 -77.64 62.812 -93.76 1.049 -78.06 59.653 -91.64 0.6175 -78.42 55.401 -89.27 0

Jephcott, 1919 t (α) _D	LX. WATER + Water + Cyar Linhard, 196	nic acid (C		ATIVES .
20 -76.82 85 -95.29	mol %	f.t.	mol %	f.t.
88,338 \$ 20	100.0 83.6 74.9 68.1 82.8 58.5 55.3	- 86.8 - 93.2 - 97.2 -101.0 - 83.6 - 68.8 - 62.0		-50.0 -42.2 -39.6 -33.9 -28.7 -23.5
20° 100	Water + Form	Turner, 191	5	
75.538 - 108.39	mol % 3.819 6.670 7.125 11.370 12.41 18.11 24.67 25.92 28.88 31.76 34.47 37.37	f.t. 0 - 2.7 - 5.7 - 5.9 - 9.9 -11.0 -16.8 -23.6 -24.3 -27.5 -31.1 -34.7 -38.9	mol % 40.32 42.87 46.59 49.10 51.62 55.54 59.64 64:03 68.35 76.98 87.68	-42.5 -45.4 -40.4 -40.0 -37.6 -33.5 -29.4 -25.5 -21.9 -14.5
44.004 - 86.47 2.505 83.15	Zuber, 1932		D	
	*	49/0	-	24.5/0 98/12.3
	0.4 0.8 1.6 3.1 6.1 9.2 12.3 13.1 13.2 15.4 18.4 24.5 27.6	2.05 2.08 1.99 2.08 2.24 2.15	1.87 1.86 1.71 1.76 1.57	1.92 - 2.09 - 2.00 - 2.09 2.02 1.94 1.75 1.69 1.55 1.56

109

WATER + CYANIC ACID

	t	(α) _D	
ه احد دین شین سی امیدسی مین صیر مین	6,63	8 %	
	20 85	-76.82 -95.29	
	85 88.3		
	20	-134.16	
	90	-150.34	
 	· · · · · · · · · · · · · · · · · · ·		
%	(α) _D	%	(α) _D
		20°	
100	-168.61 -153.06	41.718	-86.71 -85.09
95.068 91.084	-141.65	40.237 38.798	-83.79
89.471	-138.73	38.065	- 85.21
88.338	-134.11	37.986	- 84.98
83.336 81.842	-123.21 -121.48	35.098 34.877	- 83.52 - 83.39
77.006	-111.47	32.141	- 81 . 83
75.538	-108.39	30.973	- 82.48
74.868 69.202	-108.69 -100.47	30.637 30. 2 96	- 82.67 - 82.60
64.423	- 97.82	28,151	- 81.95
63.950 60.773	- 95.63	26.473	- 81.78
60.773	- 94.02	24.975	- 81.67
59.898 59.649	- 93.69 - 95.12 (?	20.963 20.726	- 80.64
56.241	- 91.27	15.023	- 80.06 - 80.99
54.289	- 89.27	12.963	- 79.79
53.096	- 90.12	11,508	~ 79.43
51.969 50.134	- 86.91 - 89.03	10.012	- 78.66
48.949	- 88.19	9.921 7.417	- 79.20 - 79.94
46.632	- 86.23	6.604	- 79.94 - 79.25
46.015 44.004	- 86.79	4.998 2.505	- 83.48

```
LX. WATER + OXYGEN-NITROGEN DERIVATIVES .
Water + Cyanic acid (CHNO)
 Linhard, 1938
                           f.t.
                                                  mol %
      mol %
                                                                         f.t.
                          - 86.8
- 93.2
- 97.2
-101.0
- 83.6
- 68.8
- 62.0
                                                  49.8
45.0
43.2
38.3
33.3
29.3
                                                                       -50.0
-42.2
-39.6
-33.9
-28.7
-23.5
     100.0
      83.6
74.9
68.1
      82.8
      58.5
      55.3
Water + Formamide ( CH3 NO )
English and Turner, 1915
                                                                        f.t.
    mol %
                           f.t.
                                                 mol %
                                              40.32
42.87
46.59
49.10
51.62
55.54
59.64
64:03
68.35
76.98
                         0
- 2.7
- 5.7
- 5.9
- 9.9
                                                                      -42.5
-45.4
      3.819
6.670
7.125
                                                                      -40.4
                                                                      -40.0
    11.370
                          -11.0
-16.8
    12.41
18.11
                                                                     -29.4
-25.5
-21.9
-14.5
     24.67
25.92
                          -23.6
                          -24.3
-27.5
    28.88
31.76
34.47
37.37
                                               76.98
                         -31.1
-34.7
-38.9
                                              87.68
                                                                     - 6.40
+ 2.20
                                             100
Zuber, 1932
```

1 %			D	
	49/0	98/0	24.5/0	98/12.3
		18°		
0.4	-	-	1.92	-
0.8	2.05	1.87	2.09	-
1.6	2.08	-	2.00	-
3.1	1.99	1.86	2.09	-
6.1	2.08	1.71	2.02	-
9.2	2.24	1.76	-	-
12.3	2.15	1.57	-	-
13.1	-	-	-	2.17
13.2			-	1.94
15.4	2.11	1.50	-	1.75
18.4	-		-	1.69
24.5	-	1.17	-	1.55
27.6	-	1.14	-	1.56

Merry and Turner, 1914			Water +	Diethyl	formani	ide (c.	- H ON)	
mol %	25° d	40°	Vasenko				,, 1021	,	
100 90.13 80.04 69.20 59.97 49.97 38.89 30.03 19.98 10.01	1:1279 .1219 .1153 .1079 .1000 .0907 .0793 .0656 .0481 .0247	1.1104 .1040 .0976 .0906 .0830 .0739 .0630 .0497 .0335 .0119	0.000 2.5323 4.793 10.040 15.564 19.849 24.961 30.134	.9935 .9913 .9854 .9772 .9716 .9645	.9922 .9889 .9819 .9732 .9675 .9604 .9541	25° 0.9971 .9905 .9867 .9786 .9634 .9634	.9884 .9839 .9751 .9652 .9588 .9515	35° 0.9941 .9863 .9813 .9715 .9611 .9546 .9474 .9405	.9838 .9785 .9676 .9568 .9502 .9429
Burrows, 1919			39.698 51.791 61.724 69.815 79.306	.9483 .9369 .9321	.9438 .9323 .9274	.9392 .9279 .9230 .9161	.9347 .9234 .9184	.9300 .9187 .9130	.9258 .9144 .9094
× ×	20° d	25°	94.792	.9321 .9251 .9213 .9177 .9120	.9207 .9168 .9131 .9079	.9123 .9086 .9033	.9080 .9043 .8988	.9037 .8997 .8948	.9027 .8991 .8951 .8902
0.73 1.70 4.10 14.73 25.70 37.11	0.999321 1.000858 .004545 .020458 .036469	0.998136 .999558 1.003115 .018488 .03397	100.00 mol %	.9094	.9051 0°		.8974 d 60°	. 8923 	.8879
37.11 46.52 59.05 66.86 75.94 88.27 94.82 97.48 99.77	.05254 .06541 .08216 1.10408 .11979 .12846 .13204 .13507 .13552	. 04963 . 06226 . 07859 . 08874 . 10020 . 11580 . 12427 . 12783 . 13090 . 13126	0.000 2.535 2.669 4.960 8.384 15.265 20.053 25.466 33.256 39.981		.9999 .9975 - .9965 .9899 .9857 .9775 .9713	0	9881 -9782 .9717 .9630 .9490 .9432 .9332 .9262	0.9 .9 .9 .9	749 628 542 438 273 2202 0099 022 3924
Ishikawa, 1927	Ishikawa, 1927		50.819 58.886 68.347	.9570 .9460 .9387			.9059 .9008 .8939 .8891		. 8819 . 8767 . 8705
0 1.0000 16.7115 .0258	30° 59.9488 77.4696	1 0894 1139	78.788 85.503 94.792 100.00		.9332 .9294 .9254 .9229		. 8891 . 8856 . 8818 . 8793	3. 3.	3657 3631 3596 3574
20.3240 .0315 35.0085	77.4 6 96 100	1439	mol %	15-20	0 20-).10 ⁴	0-35	35-40
Merry and Turner, 1914			0.000 2.5323	2.69 3.19	2.4 3.0	9 2.	32 2 62 2		2.03
mol %	2 5° η	40°	4.793 10.040 15.564	3.72 4.24 4.32	3.3 3.8	7 3.	12 2 66 3	.77	2.66 3.04 3.16
100 90.13 80.04 69.20 59.97 49.97 38.89 30.03 19.98 10.01	3359 2906 2508 2142 1927 1698 1463 1315 1161 1044 (891)	2379 2102 1813 1545 1402 1230 1091 949 835 734 (653.5)	19.849 24.961 30.134 39.698 51.791 61.724 69.815 79.306 85.741 94.792 100.00	4.40 4.34 4.08 3.85 3.07 3.00 2,69 2.44 2.22 2.04 1.94	2.7 2.5 2.3	6 3. 78 3. 79 2. 79 2. 82 2. 86 2.	75 3 61 3 21 2 88 2 69 2 37 2 09 2 04 1 92 1	2.43 2.33 2.24 2.77 2.75 2.10 2.05 2.85	3.12 3.04 2.99 2.56 2.35 2.29 2.07 2.01 1.76 1.50

Water + Ace	tamide (C ₂ H ₅ 0	N)		Wolfers,	1928			
Meldrum and	Turner, 1908				%	f.t.	E	الله الله الله الله الله الله الله الله
g/100cc H ₂ 0	b.t.	g/100cc H ₂ 0	b.t.		9 5	0 - 2.1	-	
12.23 11.13 10.13	101.125 101.005 100.910	9.33 7.82	100.835 100.675		10 14.5 17 23.6 28.5 33.3	- 2.1 - 3.1 - 3.7 - 5.9 - 9.5 -12.4	- - - -	
Speyers, 19					37.5 41.4 44.4 52.5 59	-15.5 -17.3 -19.6 -25 -16.1	-25 -25 -24	.8
mo1 %	f.t.				65.06 67.7 72.2	+ 0.3 + 9.3 +18.6	-24 -24 -25	.0
29.64 34.35 40.72	0.0 10.6 19.9	49.62 60.14 77.10	32.9 45.5 63.0		و النبية التي التي النبية التي النبية التي التي التي التي التي التي التي التي	. هد حد خور در هد حد خورد و در حد المراد و در حد ا		ر المدالم المدال المدال المدالم المدال المدالم المدالم المدالم المدالم المدالم المدالم المدالم المدالم المدالم المدالم المدالم
	و هم الله الله الله الله الله الله الله ا	سب النام التي التي التي التي التي التي التي التي	الله الله وي من شود الله والله والله والله وي من الله والله وي	Chadwell	and Politi f.t.		 N	f.t.
Jones, 1904	and Jones and	l Getman, 190)4	0,5453	-0.992	0 2.2	 678 -	3,9781
M	f.t.	M	f, t,	0.6952 0.6987 1.1163	-1.255 -1.268 -2.005	3 2.3 5 2.9	971 - 866 -	4.2090 5.1729 5.3369
0.4 1.0 2.0 3.0 4.0	-0.782 -1.930 -4.050 -6.440 -9.150	5.0 6.0 7.0 8.0 9.0	-11.800 -15.800 -20.750 -26.000 -32.500	1,8766 : Albanski,	-3.308 1949	1 3.5		6,1794
Mortimer, 19	 2 3		ه خو همینده چوه خوه همین همین همین همینده همین همین همین همین	E: -23.7	° 20.6	mol %		
f.t.	mol %	f.t.	mol %	Speyers,	1902 			
0 20 40	29.6 40.8 55.5	60 7 8.5	76.0 100.0	2	o1 % 9.64	t _0.0	d 1.0)55
=======================================			ه هم سد خده مو سو سوست سد سد دند دند دند دند. د هم شد هم قام شد شد شد من من سوست من مر سو	4	4.35 0.72 9.62 0.14	15.6 31.6 49.5 68.4	1.0 1.0 0.9	032 010
	lefson and Ma			Jones, 190	04 and Jone	es and Geti	man, 1904	ر فیباندر دی کم سک انواندر اسا سک می اساست.
	mol %	f.t.		М		d	M	d
	31.7	0.3 24.5	:::::::::::::::::::::::::::::::::::::::	0,0 0,4 1,0 2,0 3,0 4,0	1.	0° 999868 998008 001944 005784 009420 015432	5.0 6.0 7.0 8.0 9.0	1.018120 .022424 .026640 .031444 .033028

Kanonnikoff, 1885	Water + Urea ($ ext{CH}_{1s} ext{N}_2 ext{O}$)
% t d _t	Heterogeneous equilibria
34,17 25.2 1,01807	Perman, 1905
	% p(0%) p
Taimni, 1929	5.05 773.6 760.6 8.08 772.0 751.5
% 45° 40° 35° 30° 25°	10.90 772.0 743.5 16.98 770.0 728.0 27.08 765.0 720.0
32.0 1530 1730 1980 2300 2650 41.0 1740 1960 2250 2580 3030 54.0 2000 2280 2600 3030 3550 70.0 2280 2600 3000 3500 4150	Perman and Price, 1912
	t c p
Üholm, 1913	60.00 22.24 140.5 60.02 34.99 133.8 69.96 9.65 231.7 70.01 14.79 226.0
N D* N D*	70.11 19.61 223.2 69.98 38.95 209.3
10 0.685 1 0.890 5 0.795 0.5 0.898 2 0.860 0.25 0.900 • Diffusion ratio (cm ² /day) .	70.03 48.71 196.3 70.04 58.45 183.7 89.74 10.11 512.3 89.84 13.22 508.0 89.74 35.25 470.0 90.00 38.44 459.72
	90:01 56.89 410.17
	mol % c p
Kanonnikoff, 1885	60°
π H _α D H _β	0 0 149.46 4.87 14.86 146.1 7.57 22.24 140.5 8.90 25.67 141.4 12.77 34.99 133.8 14.49 38.85 132.0
34.17 1.369937 1.372084 1.377219	70°
Water + Monochloracetamide (C ₂ H ₄ ONC1)	3.10 9.65 231.7 4.88 14.79 226.0 6.63 19.61 223.2 14.67 38.95 209.3 19.45 48.71 196.2 24.81 58.45 183.7
Meldrum and Turner, 1908	90° 0 0 526.0
g/100cc H ₂ 0 b.t. g/100cc H ₂ 0 b.t.	3.28 10.11 512.3 4.38 13.22 508.0 13.19 35.25 470.0 14.65 38.44 459.73 24.39 56.89 410.18
13.65 100.735 10.81 100.575 12.23 100.655 7.34 100.365	13.19 35.25 470.0 14.65 38.44 459.73 24.39 56.89 410.18

Perman and Lo	ovett, 1926			Bovalini	, 1930		
Z	p	R	p		×	p sat.t.	t
0 17.42 48.54	55.22 51.8 45.0	.02° 69.15 67.17	34.65 36.5		7.053 7.053 16.268 20.756 20.756 13.683	23.756 23.706 23.756 30.000 25.66 28.101	25 25 25 29 26 28
0 7.364 12.49 26.17 36.90	91.35 90.45 88.87 84.57 79.85	64.36 66.92	74.5 72.65 64.7 62.6 59.8	Edgar and	Swan, 1922		
0	60 151.42	.28° 45.82	123.8	t	p sat.t.	tt	p sat.t.
7.148 12.93 18.70 21.29 30.86 37.01	149.1 146.8 144.7 142.2 136,1 131.3	45.82 53.19 58.03 61.08 63.36 68.36 73.05	118.0 111.7 107.0 104.0 95.4 85.5	19 20 21 22 23 24	13.37 14.15 14.93 15.73 16.56 17.44	25 26 27 28 29 30	18.39 19.34 20.46 21.61 22.75 23.93
0 9.063 9.90 14.17 14.83	237.8 234.65 233.4 231.8 230.1	35.39 41.58 49.67 50.27 53.86	209.0 200.0 190.1 189.4 183.1	Adams an	d Merz, 1929		
24.30	222.4 217.5	56.57	176.6	tt	p sat.t	tt	p sat.t.
27.79 31.89 0 13.05	213.1	65.44 74.67 .10° 50.42 56.70	157.3 132.2 281.5	10 15 20 25	7.48 10.24 14.05 18.06	40 50	23.09 37.66 57.77
24.84 28.38 35.16 39.29 44.80 45.33 47.39	338.4 328.85 316.0 307.5 298.7 292.2 287.5	64.97 68.47 74.03 77.64 79.79 80.60	265.0 237.9 222.95 198.3 175.6 165.7 161.2	Sakai, 19		t	
					p sat.t.		p sat.t.
Fricke, 1927	ę .	p p	10°	18 20 22 24 26 28	12.106 13.576 15.136 16.978 18.840 21.036	35 40 45 50	23.338 29.98 38.05 47.61 58.96
16.26 12.96 11.58 8.06 4.19	4 4	.947 .074 .169 .256 .404	7, 893 8,159 8,357 8,541 8,849 9,209	Beckmann			
				%	b.t.	K	b.t.
Fricke, 1929				0 1.29 2.67 4.72	100 100.095 100.195	6.92 10.45 14.23	100.530 100.823 101.167
mol 5		р		4.72	100.360		
16.06 6.39 4.05	3.4	481 7. 328 8.	0° 910 663 870				
					NA man and a state of	-	

WATER + UREA

Campetti, 1	901			Miller an	nd Dittmar,	1934	
	%	f.t.		mol \$	f.t.	mol %	f.t.
	45.94 49.10 54.16	9.85 14.92 19.92		100.00 95.91 94.50 90.04 88.94 85.78	132.6 128.8 127.3 123.2 121.9 118.7	81.90 77.02 72.17 63.43 56.80 50.95	115.3 109.9 104.4 93.8 84.4 75.3
Speyers, 19	02			84.56	118.3	47,41	68.5
mol %	f.t.	mol %	f.t.				
16.77 20.82 22.69	0.0 11.0 19.8	28.24 36.67 43.15	31.7 51.4 69.5	Vetrov,	1937 mol %	f.t.	E
Jones, 1904	and Jones and	Getman, 190	4		0 0.9 1.8	0 - 0.7 - 1.7	<u> </u>
М	f.t.	М	f.t.	}	2.9 3.9	- 2.9 - 3.8	- -
0.5 1.0 1.5 2.0 2.5	-0.975 -1.878 -2.900 -3.800 -4.724	3.0 3.5 4.0 4.5	-5.767 -6.555 -7.625 -8.975		5.0 6.2 7.3 8.7 10.0 11.6 12.5	- 4.9 - 6.0 - 7.1 - 8.3 - 9.9 -11.1	-11.5 -11.5 -11.5 -11.5
Krummacher,	1905				13 14.3 16 17.7	-10.3 - 7.1 - 2.7 + 1.5	-11.5 -11.5 -
	f,t.	8			19.6 21.2 23.7	+ 7.9 +12.5 +18.5	-
	5.5 17.1 20.92	43.80 50.01 52.23			26.0 28.2 30.9 36.6 40	+24.5 +29.7 +35.2 +48.1 +52.8	- - -
Frick and K	elly, 1925				45 50 52 60	+62.8 +71.5 +76.8 +87.5	=
*	f.t.	%	f.t.		65 68	+95 +100	-
40.1 45.7	0 10	67.2 67.4	50 50.6	, 		+132.6	<u>-</u>
51.2 57.6 62.3	20 30 39.7	71.1 74.7 75.9	60 68.5 70	Chadwell	and Politi,	1938	
Shnidman an	d Sunier, 1932			N	f.t.	N	f.t.
mol %	f.t.	mol %	f.t.	0.3241 0.4315	-0.5953 -0.7893	4.5453 5.2848	-7.1506 -8.0825
23.87 25.13 26.02 27.49 28.88 30.99 31.02 31.82 33.77 34.98	18.72 21.59 23.85 26.834 27.31 30.38 35.42 35.15 37.36 41.11 43.94	35.10 36.18 40.41 40.65 41.30 41.63 42.94 44.28 45.61 49.56 50.93	43.85 46.56 54.77 54.97 55.88 57.02 59.13 61.76 63.79 70.49 73.11	0,6458 1,5213 3,3601 3,3696	-1.1698 -2.6732 -5.4897 -5.5944	6.0126 8.0828 8.0833	-8,9659 -11.4142 E -11.4146 E

<u> </u>				<u>I</u>				
	10.0							
Polosin and	Ozolin, 1947	·		Properti	ies of phas	es		
%	f.t.	%	f.t.	Traube	, 1885			
0 4.0	+ 0.05 - 1.05	36.0 38.0	- 5.70 - 2.60		c	*	đ	
8.0 12.0	- 2.20	40.0 44.0	+ 0.15 + 6.63			15°		
16.0 20.0	- 3.47 - 4.78 - 6.00	48.0 52.0	+13.40 +20.33		10 20	9.09 16.67	1.02	
24.0 28.0	- 7.25 - 9.0	54.0 56.0	+20.33 +23.90 +27.51	 				
32.0 34.0	-10.57 - 9.0	60.0 62.0	+35.36 +39.83	Campetti	i, 1901			
					t	ď ^t		%
Rollet and C	ohen-Adad, 19	48			9.85	1.132		.94
E : -11.6°	32.6 %				14.92 19.92	1.141 1.151	49 54	. 10 . 16
				Speyers,	1902			
Cohen-Adad,	1040				mol %	t	đ	sat.sol.
	سامه در امیان ای خابی میاندان میاند اد				16.77	0.0		1.121
	f.t.	%	f.t.		20.82 22.69	19. 32.	0 2	.142 .152
12.50 25.00	- 3.98 - 8.53 -10.54	33.20 33.50	-10.83 -10.30		28.24 36.67	46. 64.	5	.159 .159
30.00 31.50	-10.54 -11.21	34.00 39.35	- 9.93 - 1.5 2	l	43.15	84.	1 	.171
32.20	-11.21 -11.45 -11.54	44.02 47.00	+ 6.80 +11.80	Rudorf,	1003			
32.50 32.60 32.70	-11.60 E -11.54	53.20 100	+23.00 131	ļ				
	هبات می د. در در بی بی در در بی بی بر ب برای کا بیران می در می شر بی بی بی بی د			N		1	N	d
				7.5	1.	25° 111	0.469	1.004
Polosin and	Treshchov, 19)53		3.75 1.875	1.0	054 027	0.234 0.117	1.000 0.998
%	f.t.	K	f.t.	0.937	1.0	őíí	0.058	0.9971
0	0	40	- 1	Jones,	1904 and Jo	ones and G	etman, 19	04
20 32.9	-6 -11 E	50 60	+19 +36	M		 I	M	d
				ļ		0°	4-4	
				0_	0.999	9868	2.5 3.0	1.035732
}				0.5 1.0	1.005 .013	3032	3.5	.044340 .051968
				1.5 2.0	.019	3824	4.0 4.5	.059140 .065824
				Zoppella	ari, 1905			
					t	%		d
					20.2	7 5287	1 0	187 5
				1	19.8 19.7	7.5287 15.4735 34.4117	1.0	4092 9447
]	20	43.6102	i.ĭ	2133

Varga, 1911				Chadwell an	d Asnes, 1930		
g	d		d	K	đ	Ж	đ
					9.9	8°	
0.5196 0.7136 1.0292 2.2411	1.000003 .000568 .001446 .004727	14.0020 16.3345 20.2082 23.3361 27.9716	1.037070 .043642 .054340 .063310	1.676 4.116 4.162	1.0044 1.0111 1.0113	8.078 14.094 19.488	1.0226 1.0399 1.0556
3.4739 5.1255	.008064 .012521	27.9716 33.4566	.076608 .092354	t	đ	t	đ
6.6156 8.3323 10.3175	.016612 .021362 .026864	43.2590 51.3270 100	. 121511 . 145337 . 321300	5.04 9.98 15.04	1.0444 1.0428 1.0415	20.01 25.07	1.0396 1.0376
Burrows, 191							
%	d	8	d	Perman and	Urry, 1930		
		25°		%	c	d	
0 2.6329 5.0484 7.3010	0.997073 1.003912 .009800 .015198	14.4848 33.0611 53.8893	1,030884 .064318 .093286	5.1 10.0 17.8 24.9	10.23 33 18.6 1 26.4	59 1.009 3 .022 1 .043 8 .063	23 34
2.3290 9.0567	1.001575 .017457	15.4282	1.030922	30.1 35.1 39.3 44.4 50.1	16 38.3 16 43.4	າດດີ 2	20 54 92
Perman and	Lovett, 1926			50,1	56,9	3 . 135 =========	59 ==========
%	đ	%	d	Wyman Jr, 1	933		
1		02°	1.181	8	d		d
17.42 48.54	1.037 125	67.17 69.15	.185		25	0	
7.364 12.49 26.17 36.90 47.89	49. 1.0005 .016 .056 .086 .118	51.81 62.33 64.36 66.92	1.129 .160 .166 .173	0 11.52 20.31	0.9971 1.0284 .0524	29.64 36.83 42.47	1.0788 .0994 .1159
7.148 12.93	1.002	53.19 58.03	1.124 .138 .147	Gucker, Gag	e and Moser, 1	1938	
18.70 21.29	.029 .036	61.08 63.36	.154	N	d	N	đ
30.86 37.01	.060 .078	68.36 73.05	.171 .185		30)°	
9.063 9.90 14.17 14.83 24.30	1.000 .002 .012 .013 .037	.39° 41.58 49.67 50.27 53.86 56.57	1.083 .107 .108 .118 .128	0.08056 0.15060 0.19976 0.39455 0.49616 0.66822	0.99694 .99804 .99878 1.00187 .00344 .00613	0.82859 1.15522 1.92868 2.95029 4.39481	1.00867 .01364 .02551 .04106 .06263
27.79 31.89 35.39		65.44 74.67 .10°	.154 .181	0.00000 0.11394 0.15077 0.35215 0.41500	0.997074 .998892 .999475 1.002682	3.33355 3.98193 5.05362 5.92297 7.28543	1.048835 .058612 .074560 .087290
13.05 24.84 28.38 35.16 39.29 44.80 45.33	1.004 .034 .0435 .0615 .0735 .0900	50.42 56.70 64.97 68.47 74. 0 3 77.64 79.79	1.1065 .1247 .147 .162 .1735 .1875	0.41500 0.62386 1.00812 1.36866 1.88532 2.42107	.003675 .006983 .013038 .018668 .026703 .034939	7.28543 8.20269 9.52555 9.52469 9.53161	.106989 .120038 .138930 .138878 .138910
47.39	.0975	80.60	.1935				

Venkatesan	and Suryanara	yana, 1956		Viscosit	y and surface t	ension	
N	đ	N	d	Růdorf,	1903		
0.18330 0.45825 0.9165 1.833	0.99580 3. 0.99884 1.00828 1.00893	5° 5.000 10.000 15.000 20.000	1.03394 1.07009 1.01423 1.14129	N	η	N 25°	η
	Urry, 1930	رسی دید. او این	نو حدد الله الله الله الله الله الله الله ال	7.5 3.75 1.875 0.937	1146 960 919 904 897	0.234 0.117 0.058 0	892 889 891 895
c	d	0-100	π 100-150	0.469 Öholm,			
5.74 12.88 19.43	1.011 1.029 1.045	30° 43.0 40.9 39.3	42.4 40.5 38.9		diffusion ratio	N dif	fusion ratio
28.56 33.74 41.66 50.12 58.69	1.068 1.081 1.100 1.119 1.139	37.2 36.1 34.4 33.1 31.7	36.9 35.6 34.2 32.5 31.0	8 4 2	1.655 1.215 1.088	20° 1 0.5 0.25	1.039 1.022 1.010
5.72 12.82 19.33 28.43 33.55	1.007 1.024 1.040 1.063 1.075	40° 42.4 40.8 35.4 37.6 36.6 35.0	42.1 40.4 30.9 37.1 36.0	Taimni,	1929 50° 45°	η 40° 35°	30° 25°
41.43 49.89 58.42 67.78	1.094 1.114 1.134 1.155	33.6 32.4 30.9 50°	34.7 33.2 31.6 30.2	120.0 128.0 141.0 151.0	1240 1327 - 1376 1328 1452 1389 1520	1438 1574 1490 1638 1587 1752 1665 1830	1740 1938 1810 2016 1946 2164 2026 2268
5.69 12.76 19.24 28.30	1.002 1.019 1.035 1.058	42.4 40.9 39.7 38.0	41.9 40.4 39.2 37.6		l and Asnes, 193		2020 2200
28.30 33.39 41.25 49.67 58.12 67.38	1.058 1.070 1.089 1.109 1.128 1.148	37.0 35.5 34.4 33.6 31.5	36.5 35.3 33.8 32.4 31.0			%	
5.67 12.70	0.998 1.014	60° 42.7 41.3	42.2	5.04 9.98 15.04	1.0863 1.0938 1.1106	20.01 25.07	1.1183
19.17 28.14 33.24 41.02	1.030 1.052 1.065 1.083	40.1 38.5 37.6 36.3	40.7 39.6 38.0 37.1 36.0	%	9	.98°	······································
49.41 57.81 67.88	1.103 1.122 1.143	35.1 33.6 32.2 70°	34.6 33.2 31.9	1.676 4.116 4.162	1.0160	8.078 14.094 19.488	1.0431 1.0881 1.1447
5,63 12,62 19,04 27,96	0.991 1.008 1.024 1.045	43.3 42.0 40.8 49.2	42.7 41.3 40.2 38.7	Wolkowa	and Titow, 1931		
32.98 40.75 49.05 57.51	1.057 1.076 1.095	38.2 37.0 35.7 (37.8 36.8	C	n	C	
66.55	1.114 1.134	34.4 33.0 80°	34.0 32.7	111.33 109.50	3 1972.3	106.46 103.69	1546.4 1410.2
5.59 12.55 18.94 27.79 32.83 48.82 57.14 66,25	0.985 1.003 1.018 1.039 1.052 1.090 1.109	44.1 42.8 41.6 39.9 39.2 36.6 35.2 34.0	43.6 42.3 41.2 39.7 38.8 36.2 35.1 33.5	:=======			

WATER + UREA

Ghosh and	Gyani, 1953			Optical and e	logininol :		
c	η (H ₂ 0-1)	C	η (H ₂ 0=1)	Zoppellari,		Constants	
		35°	_			n	
7.5 15.0	1.0511 1.1232	22.5 30.0	$1.2027 \\ 1.2980$	t		% ·)
Venkates	an and Surya	narayana, 1956	ماه الدين الدي الدين الدين ال	20.1 19.1 19.2 20	8 15. 7 34.	.5287 1.34 .4735 1.35 .4117 1.38 .6102 1.39	597 54 7
N		N	η		42,	.6102 1.39	
0.18330 0.45825 0.9165	735.7 751.5	35° 5.000 10.000 15.000	812.8 949.3 1138.0	Venkatesan ar	d Suryanaı	ayana, 1956	
1.833	752.6	20,000	1454	N	n _D	N	n _D
Traube, 1	c 10	15° 9.09 73	.347 .437	0.0009165 0.0018330 0.0045825 0.0091650 0.018330 0.045825 0.09165 0.18330	1.3323 1.3324 1.3333 1.3323 1.3324 1.3325 1.3330 1.3300	35° 0.45825 0.9165 1.833 5.000 10.000 15.000 20.000	1.3345 1.3400 1.3400 1.3535 1.37375 1.39325 1.41400
Zemplen,	1906		***	Harrington, 1	916		
t	σ	t	σ	%	ε	×	£
35.0 61.0 93.0	73.1267 67.4545 63.0549	35.1 61.8 93.1	77.9208 71.8131	0.0 0.5 1.0 1.5	78.73 80.22 81.51 82.81	2.0 2.5 3.0	83.98 85.16 86.17
34.9 61.3 93.1	73.6329 67.6782 63.1974	34.9 61.5	81.3759 74.4422	Furth, 1923			
	59 %	70.1	0 %	- %	ε	%%	ε
35.0 61.1 93.1 5.4 35.0 61.8 93.1	74.0547 68.2540 64.7974 91 % 75.1995 69.7628 66.3166	35 61	70.29 65.8	0 0.99 1.96 2.91 3.84 4.76 9.1	80.5 80.3 80.2 82.2 83.1 85.0 85.7	20° 16.6 23.1 28.6 33.3 37.5 44.8 100	87.5 88.6 88.8 90.5 90.9 91.0 3.5
Somogyi,	1916			Kniepkamp, 19	28		
	%	t a² (mg/mm)		%	ε	
	20.699 16.251 6.090	15.50 16.0 15.4	7.477 7.428 7.357		5 10 15	82.40 85.84 87.92	
		15.5° 7.360 7.375 7.378					

Wyman Jr, 19	33				**************************************		
			ε	Gucker and Ayı	res, 1937		
	. معرضه الله الله الله الله الله الله الله ال	25°		N		U	
0 11.52 20.31	78.54 83.90 87.95	29.64 36.83 42.47	91.76 94.43 96.58	0.00000	1,00000	1.00000	1.00000
Cohen-Adad,		همینیت احتیادی این احتیادی در بی جی		0.09353 0.16398 0.30232 0.50556 0.76971	0.99543 .99195 .98551 .97645 .96532	0.99569 .99236 .98019 .97747 .96653	0.99590 .99281 .98706 .97871 .96848
c	н	C	ж	1.0428 1.9689	.95444 .92214	.95613 .92460	.95849 .92803
		20.0 30.0 40.0	0,189 0,244 0,355	2.2842 3.4826 4.1930 6.4168 8.0736 10.5223	.91262 .88015 .85108 .82147 .79682	.91528 .88334 .85451 .82498	.91894 .88766 .85917 .82994 .80537 .77562
				N	20°	U 30°	40°
Venkatesan a	nd Suryanara	yana, 1956		0.00000	1.00000		1.00000
N	н	N	и	0.09353 0.16398 0.30232	0.99630 .99353 .98815	0.99654 0.98887	0.99676 0.98943
0.0009165 0.0018330 0.0045825 0.0091650 0.018330 0.045825 0.09165 0.18330	35 0.0176 0.0678 0.0566 0.0366 0.0955 0.0766 0.1096 0.1594	0.45825 0.9165 1.833 5.000 10.000 15.000 20.000	0.2366 0.3156 0.5925 1.2853 1.1183 1.0603 1.1813	0.50556 0.76971 1.0428 1.9689 2.2842 3.4826 4.1930 6.4168 8.0736 10.5223 13.5186 17.5767	.98815 .98046 .97097 .96160 .93285 .92414 .89404 .86622 .83742 .81311 .78348 .75531	98162 97254 96362 93616 92774 89849 87135 84292 81895 78960 76149	0.93048 0.87536 - 0.79467 0.73817
Thermal const		36		Perman and Lov	vett, 1926		
# #	U	%	U	mol initial	final by	Q dil mole of ac	l. Ided water
3.22 4.73 5.0 7.5	at r. 0.9798 .9690 .9679 .9514	00m t. 10 20 30 40	0.9365 .8768 .8255 .7740	34.93 33.24 31.76 30.46 28.71 13.95 10.18 7.57 29.38 27.61 22.82 19.14 17.44 10.71 7.02	40.02° 34.11 32.78 31.32 29.70 27.57 13.16 9.55 7.16 28.37 25.85 21.26 18.02 16.40 10.12 5.73	974.7 141.1 119.3 117.4 104.4 49.6 30.7 21.2 113.4 102.3 83.5 72.5 66.9 38.1	5 5 7 7 23 3 3

	··	···	·····				
mol %	Q dil	mol %	Q dil	Water + Ure	a . Resorcino	ol (C ₇ H ₁₀ N ₂ 0	3)
	49.99			Cohen-Adad,	1949 (fig.)	
40.31 39.65	1951 1963	27.02 19.61	94.5 68.7				
39.35 39.24	$\frac{1687}{273.3}$	14.09 11.07	45.7 33.8	<u>%</u>	f.t.	<u> </u>	f.t.
38.05 36.06	160.8	8.13 6.65	33.8 27.0 22.5	8.50	- 1.78	51.00	+25.88
33.96	139.2 122.3	5.18	13.9	17.00 20.30	- 3.56 - 4.22 E	59.50 68.00	33.84 42.98
30.36	104.0 60.2	8°		25.50 25.50	- 5.27 E met + 2.33	ast. 76.50 85.00	53.80 67.52
45.00	1650	16.40	62.2	34.00 42.50	+11.24 +18.55	$93.50 \\ 100$	85.46 102
41.83 39.11	$\begin{array}{c} 162.0 \\ 145.0 \end{array}$	12.96 10.15	62.2 47.4 36.5				
34.71 32.18	$126.0 \\ 119.7$	8.37 6.76	28.5 23.0	No. 4 and Disc	TOTAL CHIN	`	
26.11	101.4	0.70	23.0	water + Blu	ret (C ₂ H ₅ N ₂	,	
15.11	70.3			Rollet and	Cohen-Adad, 1	.951	
45.46 43.66	816.6 134.7	$\frac{15.96}{12.18}$	57.3 39.7	II	f.t.	d	f.t.
41.37 40.30	134.7 132.3 125.1	8.55 7.40	29.4 25.2	1 1 1 1 1 1 1 1 1 1	r.t.	%	1.1.
29.52 21.10	92.8 73.2	5.33	19.1	0 10	0 58	60 63.5	108 (tr.t.) 112.5
21.10	80.1	0		20	76	70	125
53.84	328.9	31.82	78.4	30 40	65 96	80 90	145 165
51,39 49.40	207.7 136.5	22.48 17.13	78.4 64.2 55.0	50	102	100	185
43.36 38.62	136.5 109.7 95.8 82.8	13.32 10.28	43.4				
34.47	82.8	7.79	32.2 16.9				
				Water + Thio	urea (CH ₄ N ₂ S	;)	
				,"	11- <i>££</i> 10	22	
				I	Hoffmann, 19		
				p	t	P	t
				by heating	sat.	sol.	
				755	115.5	282.5	80.2
				730 716	$114.0 \\ 112.8$	199 138	72.2 63.8
				661.5	109.0 101.0	75.5 51.5	50.0 41.3
				485	97.0	39.5 24	36.0 25.0
				425.5 342.5	93.0 86.3	47	20.0
				by cooling	11	4.5	o
				755 704.7	115.0 111.5	356 239.5	86.5 75.2 65.5 56.0
				672	$110.0 \\ 106.5$	163 104.5	65.5 56.0
				632 512 458	98.0 94.0	56 38.5	42.2 32.8
				437	92.8	12.0	17.0
				427.5 by cooling	92.0	9.5	8.0
				743	113.2 108.5	304	79.5 73.5
ŀ				655 597	103.0	249 181	73.5 65.0
				523 477	97.0 93.5	132 88	65.0 57.0 48.0
				∥ 433	90.5	45,5	35.0
				353	84.5	17.5	25.0

			WAIER T	UKEIHANE			
Janecke and l	Hoffmann, 19	32		Water + Jira	thane (C ₃ H ₇ 0	.N.)	
%	b.t.	K	b.t.	Water - ore	chane (Can70	2N)	
25 50 62.5	101.7 106.2 109.4	70 75	112.2 116.0	Speyers, 19	002		
02.5	109.4			mo1 %	f.t.	mol %	f.t.
4.7	f.t. 0.2	40.5	f.t. 60.2	3.61 6.09 6.62	$0.0 \\ 10.3 \\ 11.1$	43.70 68.91 75.58	23.5 31.4 37.0
7.0 9.3 11.1 13.2 15.0 16.6	0.2 6.8 12.3 18.3 22.7 27.1 30.0	40.5 46.5 50.8 56.8 59.4 64.0 66.0	60.2 64.8 72.0 79.0 82.7 90.3 94.3		nd Politi, 19		
18.7 23.1	34.4 40.0	67.5: 66.7	95.3 97.0	N	f.t.	N	f.t.
26.0 28.8 30.9 33.5 35.3 37.7 40.0	43.6 47.8 49.7 52.4 54.7 56.4 59.4	76.9 83.4 83.2 90.4 94.6 100.0	113.9 130.5 132.0 143.0 157.0 180.0	0.2568 0.3223 0.3840 0.4482 0.4766 0.6895	-0.4642 -0.5772 -0.6863 -0.7910 -0.8426 -1.1885	1.0377 1.1320 1.1633 1.1935 1.7609 1.7629	-1.7176 -1.8122 -1.8968 -1.9444 -2.6887 -2.6888
Shnidman, 193	33	mol%	f.t.	Speyers, 1	902 t	đ	
						sol.	
9.0 12.0 14.6 15.9 15.0 17.7 20.8	60 3 9 2 05 4 73 4	2.29 3.14 3.89 4.04 4.02 4.86 5.86	12.43 19.88 25.11 25.90 26.02 30.38 35.23		0.0 11.0 24.0 38.8 39.7	1.023 1.034 1.070 1.056 1.057	
23.6 25.9 26.9 27.7 30.3	00 92 93 74 838	6,58 7,66 3,00 3,33 2,37	38.31 42.00 43.11 44.30 47.34	Richards a	and Palitzsch	, 1919	
35.2 39.0	27 11	1.43 3.17 5.98	53.02 57.05	%	đ	%	d
44.8 48.6 50.2 55.7 59.8	51 18 21 19 78 22	3. 29 3. 29 5. 25 5. 10	62, 85 67, 43 69, 26 75, 96 81, 28	0 2.22 9.12 16.69 17.27 27.12 28.62	0.99823 1.00105 .0096 .0188 .01945 .03050 .0320	0° 38.13 44.51 47.15 50.07 55.65 56.01	1.04125 .0470 .04950 .0517 .0559 .05620
				×	π	%	π
						0°	
				0 2.22 17.27 27.12	43.25 42.49 39.17 38.93	38.13 47.15 56.01	39.32 40.00 40.86

Palitzsch, 1928	с η 20° 25°
mol% d mol% d	20 25
25° 0.0056 0.99710 2.8062 1.02010 0.0112 .99719 4.4898 .02884 0.0561 .99768 6.7348 .03712 0.0786 .99784 11.225 .04788 0.1123 .99819 22.449 .06067 0.2245 .99983 33.674 .06048 0.5612 1.00266 44.898 .05976 1.1225 .00775 53.09 .07077 2.000 .01469	0 1005.0 893.5 5.270 1121.6 991.9 10.812 1253.0 1102.5 14.869 1356.3 1191.4 20.549 1504.9 1313.6 24.599 1618.2 1408.7 28.815 1743.1 1512.6 41.464 2156.5 1860.5
	% o % o
Chadwell and Asnes, 1930	20°
% d % d	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
9.98°	17.27 44.7 56.01 38.6 27.12 41.1
2.213 1.0027 13.986 1.0187 6.553 1.0086 25.643 1.0331 8.812 1.0117	
% d	Palitzsch, 1928
	mol % σ mol % σ
0 0,9982 0,9971 5.270 1.0049 1.0033 10.812 1.0115 1.0097 14.869 1.0164 1.0143 20.549 1.0229 1.0205 24.599 1.0273 1.0247 28.815 1.0316 1.0290 41.464 1.0437 1.0403	25° 0.0056 71.75 1.1225 50.21 0.0112 71.40 2.000 45.40 0.0561 69.42 2.8062 43.04 0.0786 68.60 4.4898 40.81 0.0786 68.52 6.7348 39.66 0.1123 67.32 11.225 38.80 0.2245 63.54 22.449 37.96 0.5612 56.45 33.674 37.49 1.1225 50.15 44.898 37.15 1.1225 50.24 53.09 37.04
Richards and Palitzsch, 1919	
<u>%</u> 7 % 1	
0 1005 44.51 2261 9.12 1212 50.07 2483 16.69 1405 55.65 2730 28.62 1739	
Chadwell and Asnes, 1930	-
% η (water=1000) % η (water=1000)	-
9.98°	
2.213 1049.5 13.986 1383.7 6.553 1161.4 25.643 1710.5 8.812 1217.5	

Water + Malo	namide (C ₃ H,	602N2)		Water + Ace	tanilide (C _g l	H ₉ ON)	
Meldrum and				Schoorl and	Weerd, 1922		
C*	b. t	C*	b.t.	%	f.t.	%	f.t.
13.40 12.06 11.45 * gr in 100	100.765 100.645 100.595 cc water .	10.56 9.13	100.535 100.455	0.50 0.54 0.63 0.86 1.25	15 25 30 40 50	89.8 93.7 97.0 98.7 100	84 88 99 104 114
				%	sat.t.	%	sat.t.
Water + Succ	·	H ₅ O ₂ N)		5,0 5,4 5,8 6,1	80 86 90 95 97.5	60 75 80 80.5	142 127.5 118 96 91.5
Speyers, 190		· · · · · · · · · · · · · · · · · · ·		6.6 20 30	134 142	81.9 83.4 84.4	88 87
mol %	f.t.	mol %	f.t.	40 50	144 143.5	87	83.2
1.58 2.74 4.23	$0.0 \\ 11.3 \\ 20.7$	9.91 27.14	33.3 69.3				
t	đ	t	đ			(a # No N	
0.0		sol.	1 10/	Water + Met	hylacetanilid	e (C ₉ H ₁₁ NO)	
0.0 15.9 36.6	1.025 1.042 1.104	50.3 65.0 84.4	1.126 1.158 1.171	Meldrum and	Turner, 1910		
]	%	b.t.	
Water + Benza	nmide (C ₇ H ₇ N	(0)		į.	12.88 11.17 14.78 7.883	100.162 100.137 100.141 100.093	
Meldrum and T	Curner, 1908						
c*	b.t.	C*	b.t.	Kerler, 189	4		
13.27 11.23	100.380 100.335	10.05 8.43	100.295 100.265	molar	onductivity	М	
c*:gr.in	100 cc water			79	0.234 1.62 1.58 1.596 0.178	2.8377 0.9459 0.3153 0.1051 0.03503	

						· · · · · · · · · · · · · · · · · · ·	
				Water + Thiaz	ole (C ₃ H ₃ NS)		
Water + o-Mo	onoacetylphen	ylenediamine	$(C_8H_{10}ON_8)$	Metzger and D	isteldorf, 195	3	
Sidgwick and	i Neill, 1923			m L	ol % V	р	
-	f.t.	%	f.t.		90°		
3.40 12.05 22.32 31.95 41.64 51.73	7.2 22.0 33.5 42.1 50.4 59.1	64.10 71.72 79.22 85.80 93.23 100.0	69.9 78.2 88.1 99.0 115.4 144.8	100 98.5 90.0 82.0 65.0 50.0 38.0	100 92.4 64.4 50.6 35.6 30.3 28.5	320 340 450 530 645 684 693	
				28.0	28.4	695.	5
Water + m-Mon		lenediamine	(C ₂ H ₁₀ ON ₂)	24.0 10.0 5.0 2.0 0.0	28.4 27.7 23.9 14.0 0.0	694. 689. 658 601 526	
Sidgwick and	Neill, 1923		•		 ol %	t	
	f.t.		f.t.	L "	V V	·	
	1,						
9.05 18.12 28.20 44.13 53.34 63.56	48.7 82.9 110.1 132.9 144.2 156.3	71.10 79.34 86.73 94.15 100.0	167.0 181.9 204.4 235.8 279.0	100.0 88.0 78.0 68.5 57.0 54.0 46.5	750 mm 100.0 58.8 45.2 37.6 32.0 31.0 29.3	111.5 103.6 98.1 95.1 93.1 92.8	5
Water + p-Moo		lenediamine	(C ₈ H ₁₀ ON ₂)	33.5 27.5 14.0 10.0 7.0 4.5 2.0 1.2	27.9 28.0 28.3 27.7 25.6 21.8 13.9 9.9	92.1 92.1 92.1 92.2 93.8 96.0 97.1	.5 .0 .0 .0 .5 .5 .3
6.50 18.63 27.63 34.27 42.82 49.10	56.8 86.3 92.1 93.7 96.5 98.6	60.15 69.35 79.50 81.74 94.13 100.0	103.2 107.1 112.6 119.2 144.0 160.5	Metzger and D	isteldorf, 195	3 (fig.)	n _D
	feine (C _B H ₁₀			0 20 40	25° 1.3390 1.4400 1.4850	60 80 100	1.5120 1.5300 1.5380
Kremann and	Janetzky, 19	23					
%	f.t.	%	f.t.				
0.0 0.5 1.9 2.1 3.1 4.5 5.4 7.2 E: - 0	0.0 - 0.2 - 0.30 - 0.40 - 0.40 +13.0 - 32.5	9.6 15.0 20.0 25.0 30.4 35.5 40.0 45.6 59.0	40.5 49.5 54.5 58.5 61.0 67.2 73.0 81.5 100.0				
				ı			

							
	ipyrine (C ₁	-		Charonnat, 1	927		1
Kremann and	d Janetzky,			X	f.t.	%	f.t.
×	f.t.	%	f.t.	6.57	0 20	40 50	70 70
100.0 96.1 94.7 88.5 83.0 78.1 72.5	+109.0 95.0 88.0 70.0 56.0 46.5 38.0	52.6 47.8 45.5 43.6 41.2 39.1 35.4	+15.5 +11.0 + 7.0 + 6.1 + 2.5 - 2.8	5.3 5.3 7.9 13.04 20 30	37 55 65 68 69	60 75 94 100	70 70 74 90 108
67.0 61.9 57.3 54.8	30.4 24.9 20.2 18.0	26.2 16.7 0.0 E: -3.	- 1.7 - 0.9 0.0	Kaplan and Ra			
				%	f.t.	<u></u>	f.t.
Kaplan and F	Rabinovitch,	1948		1.0 1.9 2.7	$\begin{array}{c} -0.1 \\ 0.0 \\ +1.0 \end{array}$	20.0 21.0 68.6 L ₁	+72.0 72.5 73.0
%	f.t.	%	f.t.	3.9 4.5	4.0 8.5	$\frac{69.1}{72.2}$	73.5 75.0
44.9 49.9 54.0 59.0	14.5 20.5 24.5 30.0	63.5 69.0 77.0 86.0	35.5 41.5 55.0 72.0	3.9 4.5 5.2 7.2 8.2 10.5 14.0 18.0	53.5 59.0 61.5 64.5 68.5 71.0	75.4 78.0 85.0 88.2 91.0 93.5	76.5 78.0 83.0 90.0 97.0 104.5
Krupatkin,	1956 f.t.	%	f.t.	Krupatkin, 1	956		
100,00	113.0	50,00	81.0	sat.t.		%	
90.00 80.00 70.00 60.00	98.0 88.5 83.0 82.0	40.00 30.00 20.00	80.5 79.0 69.0	169 167.5 167 165		40 50 60	40 30
Water + Pyr	amidon (C ₁₃]	H _{1 7} N ₃ 0)		160 158 145 143 130 106 84 83 75.5		70 75 - - 75 -	20 15 10 10 15 20
Charonnat,	1927			74 71 69.0		70 60	30
%		sat.sol. lower hig	gher	68.0 68.0		50 45	40 45
9, 10 15 20 27 40 45 50 66, 75		175 - 190 188 175 152		100 95 90 80 70 60	f.t. 108 86 78 72 71 70.5	50 40 30 20 10 5	70.5 70.5 70.0 69.5 62.0 15.0

				× ×		(a)	
Water + Sal	icin (C ₁₃ H ₁₈	0 ₇)			4885 A	44	32 Å
Tammann, 19	15			1.47 2.77	148.36 146.6),87 9,10
×	р	%	р	5.303 10.08	145.80) 17	7.68 6.30 5.60
0.82	100		742.0	12.16 16.055	145.04 5 144.8		5.00
9.82 19.62 27.59	755.1 750.5 746.7	33.54 39.68 50.96	743.0 739.7 731.4				
						N 0 1	i
				Water + Cy	tisine (C ₁₁ H ₁₄	N ₂ U)	
Water + Sa	ccharin (C ₇ H	(503NS)		Rauwerda,	1900		
Punch 100	2				8	f.t.	
Furth, 192					43.85r 55.22	16 30	
	ε 20°	<u>%</u>	ε				
0.0 0 .0 5	80.5 84	1.5	74.8	c	<u>a</u>	<u>c</u>	<u>d</u>
0.10 0.25	84	2 5 10	72.5 66	2 5	1.0028	30 50	1.0680 .1151
0.50 0.75	84.5 86.2 81.0 77.2	20 30	57.5 47.5 38.5	15 25	.0099 .0327 .0571	60	.1405
1	77.2			 		с	(α) _D
				c	(α) _D		
Water + Sac	charinic acid	l lactone ((7.W 0 *	2 5	119.10 123.20	30 50	125,23 111,22
1			-6n1 ous)-	15 25	127.40 127.4	60	101.46
Rimbach and	Heiten, 1908	} ~~~~~~~					
%	d	-	đ				
0	0.9982	10.08	1,0310	Water + Me	thylcytisine (C ₁₂ H ₁₆ N ₂ O)
1.47 2.77	$1.0042 \\ 1.0078$	12.16 16.055	1.0376 1.0506	1			
5.303 *The aut	1.0164 hors call it	" saccharin		Rauwerda,			
			·	ļ	*	f.t.	
				}	46.51 53.19	19 30	
Rimbach an	d Heiten, 190	8 .		c	ð	c	ð
*	6655 Å	(α)	?	2	1,0011	30	1.0547
		5893 Å	5330 Å	5 10	.0053 .0175	40 50	.0721
1.47 2.77 5.303	74.86 72.36 71.05	93.82 93.31 93.32 93.24	123.63 119.40	20	. 0342		
5.303 10.08 12.16	71.05 70.95 70.68	93.32 93.24 93.21	119.32 119.16	С	(α) _D	С	(α) _D
16.055	70.89	93.21 93.13	119.16 119.30 119.22	,	224 45	30	238 20
				2 5 10	224.45 230.00 234.10	40 50	238.30 231.16 219.40
				20	238.20		
Ī							

Water + Ni	itrosopiperidi	ne (C ₅ H ₁₀ ON ₂)		 		
Flaschner,	1909			Jacobson,	1951		
	%	sat.	t.		c s	ound velocity (m/sec.)	/
	94.6 85.9 75.6 67.0 51.9 43.3 38.5 30.1	31.5 103.5 133.4 143.5 147.7 149.3 150.3			20° 36.3 23.9 16.3 10.7 7.04 4.72	1601.7 1556.8 1532.1 1514.7 1504.6 1497.9	
	22.7 15.2 8.1	148.0 141.5 124.0 73.5	14.5	.∥	vine serum alb Tkaczyk, 1954	umine	
 Water + Al	lhumine				ⁿ 5780	 %	n==00
						[%]	^η 5780
	d Flieher, 19		شیر سیم شیر شیر شیر شی صب است شد. سید است سد سی سد	0 10	1.334 1.350 1.370	30 40	1.388 1.406
8	d	# 17°	d	20	1,370	50	1.424
0.5 1.5 2 3 4 5 6	1,00143 .00283 .00432 .00562 .00835 .01085 .01341 .01634	8 9 10 11 12 13 14 15	1, 02150 .02410 .02666 .02923 .03176 .03432 .03689 .03942 .04028	Water + Ge Furth, 192			
رامي ميراني الد كار عند من امن كاراني كار و ميراني مين شام امار مان است امارات كار است ا		ے میں اس سے میں است القبیدیا اللہ اللہ اللہ اللہ اللہ اللہ اللہ ال	سے اموادی میں جی کیوناس سے اب میں اندائے آپ میں ا ربی میں میں شین فور کی جات اندائی کار انداز کار انداز ان	%	ε 2		<u>-</u>
Jacobson,	С	d		0 1.9 4.8 5.8 6.7 9.1	80.5 74.0 67.5 66.0 66.0	13.0 16.6 16.6 30.0 50.0	58.0 53.0 51.5 48.0 44.0
	0 4.72 7.04 10.7 16.3 23.9 36.3	0° 0.9982 1.0111 0177 0273 0416 0619 0997 π 20° 35.45 38.86 40.90 42.43 43.40 44.08 45.40		9.1	61.5	100.0	5,6

Fowler and	Hunt, 1941			
% L	v	% L	V	
······································	at b	.t.		
11.0		50.5	78.3 80.1]
$\frac{12.1}{12.7}$	67.9 70.6	55.3 65.9	80.1 78.2	1
12.1 12.7 14.8 21.0	66.4 67.9 70.6 74.7 75.3	55.3 65.9 80.1 91.9	78.2 78.2 81.0	- 1
			81.0	1
Az : 78.	2 % 83.7	· 		
chumacher a	and Hunt, 194	2		
%		%		
L	v	L ,	V	
97.5	87.0 at	b.t. 43.4	76.7	-
94.6	80.3 78.0 77.2 76.4 76.4 76.4	31.5 24.7 22.0 18.8 15.0 12.7 8.3 7.4	76.7 76.5 76.3 76.0 74.8 72.8 71.2 63.9 60.8 47.5	ļ,
91.8 88.5	77.2	22.0	76.0	1
84.0 80.1	76.4 76.4	18.8 15.0	74.8 72.8	1
72 i	76.4	12.7	71.2	¥
65.4 55.8 50.3	76.4 76.5 76.5	8.3 7.4	63.9 60.8]
50.3	76.5	4.6	47.5	Į.
Az : 76.	4 % 83.6°			-
Timmermans	1907			
C.S.T. = 10)3° 65 %			
Timmermans	and Kohnstam	m, 1909 - 191	10	
C.S.T. = 10	3.3° dt/dp	(1-150 kg/cm	n^2) = -0.008	
Lecat, 1949				{
	<u> </u>	b.t.		
	-	82 Az		
	76.4 100	82 Az 83 6 Az 101 25		
				- 1

	''D		%	n _D
		2 0°		
99.28	1.3813		12.13	1.3400 (L
99.21	.3811		11.15	.3400 "
98.22	.3805		10.07	.3395 .3390
97.97	.3802	(T)	9.07 8.02	.3385
96.96	.3800	(Ľ1)	7.02	.3380
96.03 95.00	.3800 .3800		5.93	.3371
12,84	.3400	11	3,73	

Campetti ar	nd Delgrosso, 1	910	
%	sat.t.	Я	sat.t.
96.91 90.22 84.64 79.09 66.88	150 185 215 225 234	29.68 13.86 5.03 0.80 0.57	232 217 178 97 60

Water + $o_Nitrotoluene (C_7H_7NO_2)$

Campetti and Delgrosso, 1910

%	sat.t.	%	sat.t.
97.79	138	43.26	245
91.90	197	29.93	242
85.36	222	20.77	238
82.05	231	13.33	230
77.21	237	5.97	205
69.21	243	2.17	164

Water + Nitrites and Nitrates

Lecat, 1949

	2nd Comp.		A	z
Name	Formula	b.t.	%	b.t.
Butylnitrite	C4H902N	78.2	93	70.0
Isobutylnitrite	$C_{\mu}H_{9}O_{2}N$	67.1	92	63.2
Isoamylnitrite	$C_5H_{11}O_2N$	97.15	85	80.6
Methylnitrate	$CH^3 O^3 N$	64.8	84	61.5
Ethylnitrate	$C_2H_5O_8N$	87.68	78	74.35
Propylnitrate	$C_3 H_7 O_3 N$	110.5	75	84.8
Isobutylnitrate	$C_4H_9O_3N$	123.5	72	88.5
Isoamylnitrate	C_5H_1, O_3N	149.75	60	95.0

Water	+	o-Nitraniline	($C_6H_6O_2N_2$)
-------	---	---------------	---	----------------	---

Sidgwick and Rubie, 1921

9	f.t.	%	f.t.
100	69.7	66.89	205.2
99.43	68.0	52.30	210.3
98.29	66.0	35,71	208.6
97.23	$68.0 L_1 + L_2$	17.50	194.2
96.16	91.0	10.74	178.5
92.05	142.0	7.19	164.5
89.50	160.2	2,95	128.4
81.88	188.5		

$$C.S.T. = 211.0^{\circ}$$

$$E = 63.0^{\circ} 97.5 \%$$

Water + m-Nitraniline ($C_6H_6O_2N_2$)

Sidgwick and Rubie, 1921

%	f.t.	%	f.t.
100	114.6	57.55	185.8
99.86	113.5	50.57	186.1
94.96	103.2	36.94	185.2
90.02	125.6 L ₁ +L ₂	25.39	180.5
83.60	159.9	13.08	164.2
79.82	169.3	6.04	136.5
75.77	176.7	1,70	83.4

C.S.T.
$$\approx 187.5^{\circ}$$

$$E = 99.0^{\circ} 93.5 \%$$

Water + p-Nitraniline ($C_6H_6O_2N_2$)

Sidgwick and Rubie, 1922

%	f.t.	%	f.t.
100	147.0	62.58	170.4
98.96 96.38	144.8 136.8	51.07 39.49	$172.0 \\ 172.0$
93.86 92.52	128.0 124.2	28.82 9.29	169.5 141.5
86.82 81.27	129.2	5.16	123.5
68.19	148.6 L ₁ +L ₂	2.79	97.0

$$C.S.T. = 172.5^{\circ}$$

$$E = 115.5^{\circ} 90.\%$$

Water + o-Nitracetanilide ($C_8H_8O_8N_2$)

Sidgwick and Rubie, 1921

%	f.t.	%	f.t.	
100 99.38 97.11 94.54 93.65 83.47 76.28	93.4 92.4 83.2 99.0 L ₁ +L ₂ 110.2 173.1 188.0	65.04 41.16 24.06 11.97 8.04 3.97	195.0 197.0 191.2 179.2 157.6 120.0	

$$C.S.T. = 198.0^{\circ}$$

$$E = 81.0^{\circ} 96 \%$$

Water + m-Nitracetanilide ($C_8H_8O_3N_2$)

Sidgwick and Rubie, 1921

%	f.t.	%	f.t.
100 93.57 91.72 81.18 73.74	154.5 129.2 124.2 149.2 L ₁ +L ₂ 166.4	66.08 31. 1 3 14.52 5.21	175.7 176.9 163.5 130.0

$$C.S.T. = 180.0^{\circ}$$

$$E = 118.5^{\circ} 90 \%$$

Water + p-Nitracetanilide ($C_8H_80_5N_2$)

Sidgwick and Rubie, 1921

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	%	f.t.	%	f.t.
	95.20	192.2	25.62	172.8
	81.84	163.6	14.36	164.2
	65.84	171.7 L ₁ +L ₂	7.08	156.5

$$C.S.T. = 178.0^{\circ}$$

$$E = 161.5^{\circ} 80 \%$$

Water	+	o-Nitrobenzaldehyde	(C7H5O3N)
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Sidgwick and Dash, 1922

Я	sat.t.	%	sat.t.
0.70 1.53 4.75 93.56	66.9 103.1 166.0 161.7	94.80 96.49 99.00	145.1 113.5 63.8
$E = 39.7^{\circ}$	99.9 %		

Water + m-Nitrobenzaldehyde ($C_7H_5O_3N$)

Sidgwick and Dash,

	sat.t.	<u></u> %	sat.t.
0.39 0.96 1.95 3.01 3.95 4.92 10.51 14.03 23.35	40.5 75.1 111.9 136.4 147.1 157.3 181.0 191.4 205.4	39.62 56.23 78.77 86.75 90.18 92.87 95.67 97.83	211.8 211.7 195.3 179.3 167.0 152.0 126.2 85.2 58.0

C.S.T. = 212°

Water + p-Nitrobenzaldehyde ($C_7H_50_3N$)

Sidgwick and Dash,

 $C.S.T. = 216^{\circ}$

Я	sat.t.	%	sat.t.
0.97 2.91 8.78 20.67 37.77 51.92	90.2 132.4 176.5 205.4 215.5 215.7	63.19 90.65 92.74 96.70	213.4 172.6 164.6 134.2 106.5
E = 97.1°	98.2 %		

Water + p-Chloraniline (C₆H₆NC1)

Sidgwick and Rubie, 1921

%	f.t.	%	f.t.
100 99.11 98.41 96.75 96. 27 94.28	70.5 69.0 67.0 88 L ₁ +L ₂ 100	4.62 3.26 2.20 1.04 0.525	160 136 111 55 42
E = 97.5 %	65°		

Water + o-Chloraniline (C_6H_6NC1)

Sidgwick and Rubie, 1921

%	sat.t.	%	sat.t
.00	- 2.1	3.35	158
99.44 98.50	+19.0 75	$\frac{2.19}{1.25}$	130 95
97.58	115	1.04	80
96.02	155	0.916	71
	E : -7.0°	99.8 %	

Water + m-Chloraniline (C_6H_6NC1)

Sidgwick and Rubie, 1921

Я	sat.t.	g.	sat.t.	
100 99.51 98.85 97.90 90.50	-10.4 - 6.0 +36 88 130	2.23 1.47 0.91 0.574	150 125 100 75	
	E : -15°	99.5 %		

Water + o-Chloracetanilide (C_8H_8ONC1)

Sidgwick and Rubie, 1921

%	f.t.	%	f.t.
100 98.9 97.43 94.95 92.87 88.72 85.12	86.7 82.0 77 73 105 L ₁ +L ₂ 150 175	10.71 6.63 5.13 2.94 1.69 0.692 0.323	182 155 112 105 85 65 15
E :	70.0° 95 %		

		- 	<u> </u>	ii			
Water + m-Chl Sidgwick and	oracetanilide	(C ₈ H ₈ ONC1)		Water + Ammo		mate (CH ₅ 0 ₂ N)
%	f.t.	<i>K</i>	f.t.	%	f.t.	%	f.t.
100 98.00 96.82 94.41 91.29	76.6 69 64 81 L ₁ +L ₂	6.14 2.76 2.49 0.743 E: 59 5°	176 138 130 76	50.0 55.6 58.9 62.5	- 1 +12.5 +20 +29	66.7 76.9 100.0	+39 +63.5 116
86.86	. 165	E: 39 3	95 %	Perkin, 189	ı		
Water + p-Ch	loracetanilide	(C ₈ H ₈ ONC1)	mol \$		d 15°	25°
Sidgwick and	Rubie, 1921			25 10.22		1.1265 .0723	1.1223
%	f.t.	%	f.t.	9.09		.0665 0.9991	.0631 0.9971
100 97.38 93.16 89.60 88.08 85.23 E: 138.0°	178.4 168 150 142 160 L ₁ +L ₂ 178	3.85 1.87 0.837 0.452 0.384 0.095	169 140 115 102 97 65.5	Saslawsky and	d Standel	q,	d
Water + Meth	ylpelletierine	(C ₁₅ H ₁₇ NO)	6.2816 12.517 18.712 24.813 31.004	1.0163 .0327 .0487 .0638 .0783	37.101 43.186 49.256 53.782	1.0920 .1051 .1174 .1262
С	sat.t.	c	sat.t.				
1000 500	58 43	16.5 12.5	42.5 47	Perkin, 1891			
335 250	40 37.5	10 8.5	53 58	mol 9		(α) magn.	t
200 100 50 25	36.5 35.5 35.5 C.S.T. 38	7 6.5 5.5 5	63 68 74 80	25 10.22 9.09	? ;	1.1034 .0644 .0539	17.4 18.6 16.4
Water + dl-Me	thionine (C ₅ I	H ₁₁ NS)		Water + Ammo	nium acid	formate (C ₂	H ₇ 0 ₄)
Dalton and Sc	hmidt, 1935			Groschuff, 1	903		
%	f.t.	R	f.t.	%	f.t.	Я	f,t,
1.79 2.02 2.28 2.57 2.91 3.27 3.67 4.12 4.59	0 5 10 15 20 25 30 35 40	5.13 5.72 6.38 7.07 7.84 8.64 9.51 14.97	45 50 55 60 65 70 75 100	46.7 49.6 50.4 51.3 52.1	- 6.5 + 1.5 + 4 + 6 + 8.5	49.6 53.0 55.8 57.8	- 7 +13 +29 +39

WATER + AMMONIUM ACETATE

Wate	er + Ammo	onium acet	ate (C ₂ H ₇ O ₂ N)		Guillaume	<u> </u>		
Hag	ger, 1876	5						d 20°	
%	đ	%	d 16°	%	đ		9.35 35.0	1.0209	
0 3 4 5 6 7 8 9	0.999 1.007 .009 .011	19 20 21 22	1.039	36 37 38 39	1.0699 .0714 .0729 .0744	Rubien, 1			
6 7	.013	23 24	.047	40 41	.0759	N	n _D		n _D
10 11 12	.017 .019 .021 .023 .025	20 21 22 23 24 25 26 27 28 30 31 32 33 34	.051 .053 .055 .057 .059	42 43 44 45 46 47	.0789 .0804 .0819 .0834 .0849	0.509 1.020	1.33893 1.34445	2,050 4,105	1.35521 1.37537
13 14 15 16 17	.027 .029 .031 .033	31 32 33 34	.061 .0625 .0640 .0655 .0670	48 49 50 51	.0864 .0879 .0894 .0909 .0924	Heydweill	ler, 1913		
18	.037	35	.0684	52	.0939	N	n _D	N	n _D
Perl	kin, 189					0.5 1.0	1,33883 ,34423	18° 2.0 4.0	1.35470 1.37435
	mo1	%	d 15°	25°					
	18.3	20		.0792		de Garcia	1, 1920		
	7.	í′ 	.0480	.0449		N	n _D	N	n _D
Неу	dweiller	, 1912				4 2 1 0.5	1,3670 .3504 .3416 .3376	19.5° 0.25 0.125 0.062	1,3354 .3343 .3338
m	01 %	đ	mol %	d	l —————	========		ور المداعلي عوب هذر الله فاقع الين شب عند 100 الآواد الله عبيد عبد بر المداعلي الله الله عبد الله عبد الله الله الله الله الله الله الله الل	
0 0	.509	0.99862 1.00717 1.01527	18° 2.050 4.105	1.03 1.05	3044 3688	Guillaume	·		
===							%	n ₅₇₈₀	
đe	Garcia,	1920					9.35 35.0	20° 1.3478 .3854	
	N	d	 N		d				
			19.5°			Perkin, 1			
4 2	.5	1.052340 .027561 .014200 .007012	0.25 0.125 0.062	$\frac{1.00}{.00}$	03551 01510 00653		mol %	(α)magn.	t
0 =====	.5 =======	.014200	0.062	00 . =======	00653		18.39 7.7	1.0800	16.6 16.6

Guillaume, 1946			Water + Amm	onium carbona	e (CH ₈ O ₃ N ₂)
R	* (α) ⁵⁷⁸⁰ magn.		Lunge, 1883		~ ~	
	20°		%	d	%	d
9.35 35.0	$\frac{3.986}{3.980}$			15		1 0 / 20
* in radians, gauss	and cm.		44.90 42.65 40.23	1,1414 ,1362 ,1297	19.83 17.88 15.95	1.0672 .0606 .0543
Heydweiller, 1912			38.06 35.85 33.95	. 1230 . 1174 . 1115	14.75 12.50 9.96	.0497 .0427 .0337
mol % ×	mol %	ж	31.74 29.74	. 1049 . 0995	8.20 6.58	.0274 .0219
205.0	18°		27.93 25.71	.0937 .0363	4.75 2.36	.0155
0.509 305.9 1.020. 555.4	2.050 4.105	868.8 1055	23.62 21.58	.0795 .0728	0	0.9991
Water + Ammonium prop	ionata (C. H. NO.		1/2	τ.10 ⁵	%	τ,105
water + Ammonitum prop	ionate (Cangnua	.)	44.90	15°	19.83	50
Perkin, 1891			42.65 40.23	65 63	17.88	46 48
%	d		38.06 35.85	59 63	15.95 14.75 12.50	45 43
ر سو این بین میں میں میں میں میں ہیں جن میں اس سے می سے مواقع کے انداز اس اس میں اس		25°	33.95 31.74	58 61	9.96 8.20	39 34
63.87 3 2. 95	1.0526 1.	0694 0485	29.74 27.93 25.71	60 65 56	6.58 4.75 2.36	31 26 22
0 :====================================	0.9991 0.	9971	23.62 21.58	56 50	0	16
Perkin, 1891				سے بھی جی جی شیخ کالی کالی کالی کی ایس کی جی شیخ کالی کی ایس کی ایس کی ایس کی ایس کی کالی کی کالی کالی کالی ک کیل جی جی جی داران کالی کالی کالی کالی کالی کی کالی کالی ک	همو جون الدر الدين ا الدين الدين الدر الدين الد	
	(α) magn. t		Lunge and S	mith, 1883		
			8	d	8	d
63.87 32.95	. 1018 18 . 0672 19	.2		15		
Notes Ammonium vol.	rienate / C.W.	======================================	0 1.66	0.999 1.005	22.25 23.78 25.31	1.075 .080
Water + Ammonium vale	erranate (C ₅ H ₁₃	U ₂ N)	3.18 4.60 6.04	.010 .015 .020	26.82 28.33	.085 .090 .095
de Garcia, 1920			7.49 8.93	.025 .030	29.93 31.77	. 100 . 105
N d	N	d	10.35	.035 .040	$33.45 \\ 35.08$.110 .115
4 1.02/374	20°	,	13.36 14.83 16.16	.045 .050 .055	36.88 38.71 40.34	. 120 . 125 . 130
4 1.026314 2 .014125 1 .007118	0.25 0.125 0.062	1,001500 .000600	17.70 19.18	.060 .065	42.20 44.29	. 135 . 140
0.5 .003568	0.002	.000218	20.70	.070	44.90	. 1404
de Garcia, 1920						
N n _D	N	n _D				
۔ سر بین نہیں میں سے بعد بعد ابند ابند ابند کی ایک ایک ایک ایک ایک ایک ایک ایک ایک	20°	,				
4 1.3751 2 .3545	0.25 0.125	1.3361 .3345				
1 .3440 0.5 .3386	0.062	.3340				
د سد. دری میں دین جدد مید شده شده اس کی کلد دین دین شده حدد است کا دیگر آباد آباد است کا دین دین دین دین کا سی بد شده دری شور سال به دین دین سال دین	سی سی میں امیان شین شین کا انتخاب اللہ اللہ اللہ اللہ اللہ اللہ اللہ ال					

WATER + AMMONIUM BICARBONATE

Smith, 1883				Water + Am	monium bicarbo	onate (CH ₅ O ₃	N)
z	d	 %	đ	Dibbits, 18	3 7 4		
		4°		%	f.t.	Ž.	f.t.
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 21	0.9993 1.0033 .0066 .0100 .0133 .0166 .0257 .0257 .0258 .0318 .0355 .0392 .0430 .0467 .0505 .0540 .0574 .0609 .0643 .0678 .0712	23 24 25 26 27 28 29 31 32 33 34 35 36 37 38 39 40 41 43 43 44 45	1.0781 .0815 .0850 .0881 .0911 .0942 .0972 .1003 .1032 .1062 .1091 .1120 .1149 .1177 .1205 .1234 .1262 .1290 .1315 .1341 .1366 .1392	10.63 10.91 11.18 11.45 11.77 12.05 12.36 12.70 13.04 13.34 13.16 14.01 14.38 14.75 15.01	0 1 2 3 4 5 6 7 7 8 9 10 11 12 13 14 15	15.83 16.22 16.60 16.98 17.35 17.76 18.14 18.50 18.90 19.28 19.68 20.47 20.85 21.26	16 17 18 19 20 21 21 22 23 24 25 26 27 28 29 30
22	.0746	45 	. 1392 . 1417		z	f.t.	
Rakshit, 192	25				10.63 15.71 21.23	0 15 30	
% 	đ	K	d				
1	1.00278	0°	1 04005	Neumann and	Domke, 1928		
5	1.01969	20 25	1.04005 1.09605		f.t.	c	
=====					20 30	18.32 24.14	
Lunge and S		بدر مدم میں میں میں میں ملک اللہ اللہ اللہ اللہ اللہ اللہ اللہ ال		Jänecke, 1	 19 2 9		
%		* *	τ. 105	# #	f,t.	 %	f.t.
1.66 3.18 4.60 6.04 7.49 8.93 10.35 11.86 13.36 14.83 16.16 17.70 19.18 20.70 22.25	15° 20 20 30 30 30 40 40 40 50 50 50 50 50 50	23.78 25.31 26.82 28.33 29.93 31.77 33.45 35.08 36.88 38.71 40.34 42.20 44.29 44.90	70 70 70 70 70 70 70 70 70 70 70 70 70	15.2 19.65 27.6 30.8 33.9 43.2	13.7 24.2 42.1 48.3 54.4 63.6	53.2 56.7 63.1 90.0 95.0 100	74.8 81.2 89.8 105 108 107.5

Water + An	nmonium oxalate	(C ₂ H ₈ O _h N ₂)					
				%	ŋ	%	η	
Benrath, 1 	114 130 144 157	50 55 60	f.t. 171 186 195	0 1 2 5 10 20 30	894 929 948 1017 1173 (1543) 2748	40 50 60 70 80 90	(3150) 5410 10103 22573 74980 537000	
=======================================	107		ر حد الله الله الله الله الله الله الله الل	8	σ	%	σ	
Hill and	Distler, 1935			0 20	71.4 (66.1)	29° 60 70	35.4 35.6	
% %	f.t.	%	f.t.	30 40	$\begin{array}{c} 35.4 \\ (36.8) \end{array}$	80 90	38.2 44.5	
2.269 3.107 3.892	0.0 10.3 16.75	8.619 12.30 16.44	44.75 60.3 74.8 87.7	50 %	34.4′	В	n _D	
4.985 6.630	25.0 34.97	20.86 25.79	99.8	0 1 2 5 10 20 30	1,3329 1,3340 1,3353 1,3397 1,3470 (1,3607) 1,3761	25° 40 50 60 70 80 90	(1,3902) 1,4059 1,4208 1,4351 1,4496 1,4630	
Dietz, De	egering and Sch	opmeyer, 194	1	Water + Ammonium malate l ($C_{4}H_{12}O_{5}N_{2}$)				
%	b.t./742	%	b.t./742	Timmermans	and Dumont, 1	931 		
0 5 10 20 30 40	99.33 99.53 99.93 (101.01) 101.91 (104.07)	50 60 70 80 90	105.49 107.9 111.9 117.8 132.3	1 2 3 5 9	f.t. - 0.25 - 0.55 - 0.76 - 1.11 - 2.08	16.7 22.23 26.41 29.45	f.t. - 4.00 E +10 +20 +25	
	\$	f.t. - 1.9		Schneider,	1881			
	10 20 30 50 70	- 3.3 - 7.6 -14.8 -21.1 -51.8		63.046	1,2666	% 0° 38.602	d 1.1585	
×	đ	Я	ð	51.688 48.286 42.365	.2125 .1978 .1728	28.160 21.785 17.303	.1171 .0895 .0710	
_		5°	(1,0054)	39,835	. 1632	0	0.9982	
0 1 2 5 10 20 30	0.99707 0.9996 1.0020 1.0092 1.0218 (1.0461) 1.0703	40 50 60 70 80 90	(1.0954) 1.1174 1.1394 1.1596 1.1793 1.1969	63.046 51.688 48.286 42.365 39.835	-4.20 -4.60 -4.99 -5.27 -5.47	\$ 0° 38.602 28.160 21.785 17,303	-5.47 -6.30 -6.90 -7.23	

				de Garcia,	1920		
₩ater + Amm	onium acid mal	ate (C ₄ H ₉ O ₅	N)	N	n _D	N	ⁿ D
Schneider,	1 881			İ		18°	
# # # # # # # # # # # # # # # # # # #	d 20°	*	d	4 2 1	1,3931 1,3642 1,3495	0.25 0.125 0.062	1.33 7 5 1.3356 1.3344
27.591 24.887 22.005	1.1149 .1020 .0900	19.447 12.916 6.406	1.0782 .0516 .0275	Peyches, 19	36		متر حمد الحد مقد حمد الدو الدو الدو الدو الدو الدو الدو الد
%	(α) _D	Ą	(α) _D	N	(α) _{Hgg}	N	(a) _{llg}
27.591 24.887 22.005	-6.04 -6.15 -6.18	19.447 12.916 6.406	-6.33 -6.46 -6.65	0.001 0.004 0.010 0.020 0.050	46.4 46.7 47.0 47.3 48.0	0.300 0.500 0.750 1.000 1.250	49.6 50.2 50.7 51.0
Water + Amm	onium tartrate	C4H12O6N2	.)	0.100 0.200	48.5 49.1	1,500	51.7
Timmermans	and Dumont, 19	31					
¥	f.t.	\$	f.t	Guillaume,			
16.7 23.1	-4 : 03 -5 : 85	36.03 37 82	10 15		%	ⁿ 5780 Å	
28.6 E: 28.	-7.60 .6 \$ -7.58°	41.08	20		10.96 19.3 36.0	3.900 3.837 3.710	
Campbell ar	nd Slotin, 1933	}			1 1 102	4	
×	f.t.	X	f.1	M	d Jackson, 193 $(\alpha)^{mol}_{5451}$ $\stackrel{\circ}{\Lambda}$	M	(α) ^{mol} δ
30,51 36,75 3 8 ,95	0.0 15.0 30.0	44.27 46.56	45.0 50.0	0.1	7.02 7.09	25° 0.5 0.7	7.26 7.29
de Garcia,	1920			0.3 0.4 0.5	7.15 7.21 7.23	0.8 0.9 1.0	7 31 7 32 7 34
N N	đ	N	đ				
4 2 1 0.5	1.153154 .080250 .041058 .020870	8° 0.25 0.125 0.062	1,009950 .004502 .001952	Guillaume,	%	*(α)magn. 10 ⁶ 5780 Å	3
Guillaume,	1945	đ		*In radia	10.96 19.3 36.0 ns, gauss, cen	1.3537 1.3690 1.4005	
	10.96 19.3 36.0	1.0521 .0937 .1752					
				. Д			

Water + An	nmonium citrate	$(C_6H_{17}O_7N_3)$;)	Rüdorff, 187	72			
de Garcia,	. 1920							
				%	f.t.		% 	f.t.
N		7.5°	d	4.76 7.41 9.09	-2.12 -3.40 -4.20	19.	, 67 , 35 , 08	- 8.10 - 9.85 -12.15
4 2 1 0.5	1.132098 .069996 .036390 .018686	0.25 0.125 0.062	1.009238 .004650 .002288	9.09 10.71 12.28	-5.05 -5,90	24.	. 24 :======	-12:80 ===========
N	n _D	N	n _D	Vasilyev,	1910			
4 2 1 0.5	17. 1.3903 1.3636 1.3487 1.3411	0.25 0.125 0.062	1.33 72 1.335 2 1.3344	E : 41.94	% -25,2°			
=======================================	در مدن حدد خدد خدد خدد خدد خدد خدد خدد خدد خدد			Foote, 1921				•
	monium chlorsu		.H ₁₁ 0 _ե N ₂ CI)		% 	f	.t. 	
	and Dumont, 1				58.23 62.54 66.26		10 20 30	
<u> </u>	f.t.	<i>Y</i> .	f.t.		========			
23.1 24.8 28.6	- 8.68 - 8.80 - 11.73	33.3 E 38.0 40.8	- 15.08 + 15 + 20	Kordes, 1920	6			
					%	f	.t.	
	onium acid chl		(C ₄ H ₈ O ₄ NC1)		0 E 100	- 1 + 1	0 25 49	
Timmermans	and Dumont, 19	31			، کمیر حمل بین بین بین بین بیندانی کین د د خدم حمل بینوانید جین انجاد کین خود این			
	% 21.6	f.t. - 5.0 E		Schnidman,	1934			
	34.7	+20		K	f.t.		Z	f.t.
Water + Am Tammann, 19	monium thiocya	nate (CH ₁₄ N ₂	S)	59.57 62.20 64.95 65.93 68.86 70.05 72.86	13.00 18.99 26.33 28.82 36.36 39.44 46.92	74 76 78 80	.53 .94 .63 .53 .18 .73	51.37 52.50 57.23 62.46 67.21 71.53
*	p	%	p					
	10)°						
6.69 10.63 20.43	739.4 724.4	44.32 48.37 52.36	533.4 505.8 473.4	Dixon and T		0	ب سد ندم نہیں سے سے سے سے اللہ	عن من ميدنن ميدن من حيد نيد آب آلو آلو آ
20.43 25.94 31.21 36.56	681.0 651.6 620.8	54.47 59.55 61.78	456.8 415.5	mol	* 	t	d	من من من من من من من من من من من من من م
36.56	589.2	61.78	399.9	12.5 6. 4.7	32 28 71	16 15 15	1.0585 1.0944 1.1114	
			:	نور اداره اداره الدوالية الدوالية الدوالية الدوالية الدوالية الدوالية الدوالية الدوالية الدوالية الدوالية الد	الدوسيونيون ميدوني مييانيو ميونيون مورسيون ميونيون	ر النبي خان آمي کان کان خان البر خان البر رخيد خان خان شي شي البر خان البر خان البر خان	ی میں اور میں میں میں اور اور اور اور اور اور اور اور اور اور	های های خود که امام این این این این این این این این این این

Rubien, 191	11			Dhar, 1914	ŧ		
N	ð	N	đ	M	X	M	н
0 0.1039 0.2039 0.5108	0.99862 1.00049 1.00224 1.00759	1.0017 2.0082 4.0127	1.01603 .03291 .06514	8.86 5.906 4.43	4057 44 7 5 3841	2.95 6.66	2832 4060
Heydweiller	, 1913			Water + Do	odecylammonium	acetate (C ₁	ι _ι Η _{3 1} 0 ₂ N)
N	<u> </u>	N 100	d	Ralston, H	oerr and Hoffi	nan, 1941 (fig.)
0 0.1 0.2 0.5	0.99862 1.00043 1.00215	1.0 2.0 4.0	1.01588 .03260 .06500	%	f.t.	%	f.t.
0.5	1.00742			12 15 20	0 - 1 - 2 - 2 - 3 - 3	50 60 75 80	4 5 5 5 5 5 5 5 5 5 5 5 5 5
Heydweiller	, 1909			23 35	- 2 - 3	90 95	- 5 - 5
N	$^{\mathrm{D}}$	N	n _D	40	- 3	100	- 6
0.1 0.2 0.4	1.33506 .33686 .34222	1.0 2.0 4.0	1 39534 36894 40406	*	tr.t.	%	tr.t.
Dixon and Ta		t n _l)	24 30 40 45 50 55 57 60	+ 2.5 55 85 85 75 65 65	70 75 80 85 90 95 98	125 130 128 120 110 90 65 70
7 17 13	50 16 51 11 74 1.	6 1,399 5 .435 5 .455	517	62 68 75 80 86	- 4 + 2 +10 +20 +30	90 95 98 100 (see aut	+40 +52 +65 +70 hor)
Rubien, 19	11						
N	n _D	N	ⁿ D	Hoerr and	Ralston, 1942	:	
0 0.1039 0.2039 0.5108	1.33327 .33513 .33693 .34242	1.0017 2.0082 4.0127	1.35136 .36908 .40427		mol %	f.t. 69.3	
Heydweiller	, 1913				88 20 9 6 2	64 E 129.0 (4 57 E 86 (26 - 1 E	
N	λ	N	λ				
0.1 0.2 0.5	10.43 19.97 47.00	1.0 2.0 4.0	89.88 169.5 296.0				

<u> </u>				Water + Ue	xanolamine ol	ea+e / C V	NO)
	tadecylamine a oerr and Hoffm				Mc. Bain, 194		,110 ₃ /
Dew Dew	Dp	Dew	Dp	%	f.t.	Я	f.t.
point		point		21.5 22.3	180 183	55.3 63.7	122 100
29.6 39.8 49.9	0.7 0.6 0.5	59.9 19.4	0.7 0.6	25.0 30.0 35.5 37.5 39.3	181 177* 164* 159*	63.7 74.3 78.5 83.7 85.5 86.8 87.3	100 71 54 22 16.5
29.6 39.8 49.9	75. 0.7 0.6 0.5	59.9 19.1	0.7 0.9	39.6 40.2 41.4 45.7	143* 153* 156 154 143	88.0 91.8 94.5	9 8 7 14 27
24.3 29.4 34.6	95.0 1.0 0.9 0.9	39.7 49.7 59.8	0.7 1.4 1.4	49.8 * L ₁ +	135 L ₂ at room t.	97.6	43
39.3	99.0 2.0	0 % 59,8	1.4	8	n _D	%	n _D
49.5	2.0 2.3 %	f.t.		3.410 6.702 10.40 11.64	1.3385 1.3441 1.3494 1.3521	21.54 48.21 53.25 62.29	1.3669 1.4109 1.4172 1.4320
	100	78 85		16.10	1.3583		
%	sat.t.	×	sat.t.	t	и 78.	t	ж
0 20 30 25	52 53 54 106	20 75 80 90	175 175 170 130	25 40 47 50 58	1.1 2.0 2.5 3.0 4.5	60 70 80 90	4.8 6.2 7.5 9.0
	% (to gel)	48		Water + Eth	ylenediamine	tartrate d (C ₆ H ₁₄ N ₂ O ₆)
	20 40	49 50		Dauncey and	Still, 1951		
				8	f.t.	я	f.t.
				57 58 59 60	26 31.2 36.5 41	61 62 63	46 50.8 55
				8	f.t.	%	f.t.
				56.8 57.7 58.3 58.7 59.7	25 30 33 35 40	60.0 60.8 61.5 61.9 63.0	41 45 48 50 55

Water + Aniline acetate ($C_8 H_{1\,1}\, 0_2 N$)

Miskidzhyan and Volina, 1956

mol %	н	mol %	н
		20°	
100.0	19.80	20.0	219.1
90.0	24.71	10.0	290.3
70.0	35.40	5.0	318.1
50.0	90.86	3.0	293.5
33.0	135.2	2.0	266.5
25.0	176.8	1.0	198.1

Water + Aniline acetate . Acetic acid ($\text{C}_{1\,\text{O}}\text{H}_{1\,\text{5}}\text{O}_{4}\text{N}$)

Miskidzhyan and Volina, 1956

mol %	ж	mol %	н
	20	10	
100.0 90.0 70.0 50.0 33.0	25.80 45.41 58.86 88.04 138.1	20.0 10.0 5.0 3.0 1.0	197.2 286.3 332.1 332.6 220.9

Water + Pyridine acetate ($C_7H_90_2N$)

Miskidzhyan and Volina, 1956

mol %	н	mol %	u
	20)°	
98	6,126	40	59.97
95	5,343	30	118.0
90	7.203	20	162.9
80	9.793	10	280.6
70	16.74	10 5	330.7
60	23.65	ž	264.6
50	36.75	-	204.0
	00110		

Water + Pyridine acetate . Acetic acid ($C_9H_{1\,3}\,0_{\rm t_1}N)$

Miskidzhyan and Volina, 1956

mol %	н	mol %	н
	20	10	
98 95 90 80 70 60 50	33.35 37.03 37.75 43.58 49.88 57.58 71.76	40 30 20 10 8	90.24 120.67 174.3 270.5 330.9 294.6

Water + Quinoline acetate ($C_{11}H_{11}O_2N$)

Miskidzhyan and Volina, 1956

mol %	н	mol %	ж
	2	0°	
98 95 90 80 70 60 50	0.431 0.581 0.616 0.789 1.859 3.950 5.986	40 30 20 10 5	12.01 22.56 39.19 80.16 130 120.2

Water + Quinoline acid acetate ($C_{1\,3}H_{1\,5}0_{\mu}N$)

Miskidzhyan and Volina, 1956

mol %	н	mol %	ж
	20	•	
98 95 90 80 70 60 50	4.233 4.786 5.282 6.593 10.08 11.38 15.18	40 30 20 10 5 2	21.43 31.48 51.41 93.97 131.9 143.2 114.05

Water + Methylamine chlorhydrate (CH₆NCl)

Tammann, 1915

Я	р	
	100°	·
4.25 11.40 18.61 32.75 40.61 49.62	747.4 718.8 680.3 594.3 539.2 669.4	

ater + Dimet	hylamine chlor	rhydrate (C ₂ H ₈ NCl)				
				Schiff an	d Monsacchi, 18	897 - 1898	
erkin, 1896				%	đ	×	đ
%	15°	d 20°	25°		2]		
		20-	25-	65 45	1.0496 .0414	25 15	1.0253 .0150
$\frac{0}{29.04}$	0.9991 1.0386	0.9983 1.0367	0.9971	35	.0343	5	.0039
$\begin{array}{c} 58.085 \\ 100 \end{array}$	$\frac{1.0780}{1.1180}$	1.0753	1.1121	60 50	1.0481 .0441	20 10	1.0202 .0095
mol %	molar r	efractive j	nower	- 40 30	.0380 .0299	0	0.9980
	H _α	н _в	Hy	70.59 %	(sat. sol.)	f.t. = 17	0
13.94	77.688	80,222	81.980				
	% t	(α) (H	20=1)	Water + Di	ethylamine chlo	orhydrate (C ₄ H ₁₂ NCl)
5	9.04 14. 8.085 13.	8 1.7	255	Tammann, 1	915		
100	0.00 16.	7 2.3	303	%	p	%	p
Water + Trim	ethylamine chl	orhydrate	(C-H. NCI)	10.63 20.67 29.96	747.4 718.1 684.3	39.16 50.07 52.50	636.5 681.8 559.2
Tammann, 191	5 %	p		.	d Monsacchi, 18		
	100°			<u> </u>	đ	% 	đ
	11.42 22.04 30.93 41.09 49.07	737.2 693.2 658.9 592.3 531.0		42 28 21	1.0130 .0084 .0056	14 7 4	1.0028 .00034 0.99944
Water + Ethy	lamine chlorhy	rdrate (C	_e H _B NCl)	48 36 24 16	1.01408 .01133 .00675 .00353	12 6 0	1.00207 .00006 0.9980
Tammann, 191	5			Water + T	riethylamine ch	nlorhydrate	(C ₆ H ₁₆ NC1)
	×	р		Tammann,	1915		
	100°	743.1		%	p	%	p
	18.45 31.15	702.4 638.1)0°	
	47.09 52.75	626.5 584.4		8.62 17.97 29.91	750.6 733.0 692.7	39.23 47.92 51.39	651.1 603.7 583.2

4.1.52	W	7 1000		Wo to -	- Du41		
	Monsacchi, 189			mater + se	c. Butylammoni	um chloride (C ₄ H ₁₂ NCl)
"	d	<u> </u>	d 	Baldwin, I	937		
	21		1 0027	l			
54 45	1.0157 .0118	27 18	1.0037 .00057	w.1.	(α)	w.1.	(α)
36	.0075	9	0.9986		2	00	ļ
48	1.0134	14	0.9995			g/100cc H ₂ 0	
40 32	.0094 .0057	4 0	.9984 .9980	6708 6438	0.12	6497 636 2	$0.13 \\ 0.13$
24	.0025			6104	$0.13 \\ 0.14$	5893	0.16
				5780 5536	$\substack{0.16\\0.18}$	5700 5461	$\substack{0.17\\0.19}$
				5219	0.21	5209	0.21
Water + Te	tramethylammor	nium chloride	(C ₄ H ₁₂ NC1)	5153 5086	0.22 0.24	5106 4943	0.24 0.26
				4811	0.27 0.28	4800 4678	0.27 0.29
Tammann, 1	915			4722 4602	0.31	4584	0,29
		<i>d</i>		4554 4433	0.31 0.32	4477 4358	0.31 0.36
<u>*</u>	p	%	p	4353	0.32 0.35	4253	0.37
		00°		4138 4030	0.40 0.45	4007 3951	0.42 0.47
12.92 24.09	728.4 686.7	38.77 53.43	602.3 471.0	3852	0.50	3792	0.54
31.24	649.1	53.84	467.9	3713 3584	0.57 0.63	3668 3535	0.60 0.66
				3471 3400	0.69	3450 3355	0.71
				3310	0.75 0.81	3295	0.78 0.82
Water + Tet	raethyla u moniu	m chloride 4	CoHooNC1	3250 3100	0.90 1.09	31 34 3048	1.02
	,		-8.120101	2999	1.19	2975	$\substack{1.16\\1.26}$
Schiff and	Monsacchi, 189	7 - 1898					
*	đ	%	d	Taylor and	Moore, 1908		
	21		1 001=	m	d	m	d
63 42	1.0366 .0176	14 7	1.0017 0.9998	25			
28 21	.0085 .0044	4	.9988	0 23	0.99707	35	
	.0044	· · · · · · · · · · · · · · · · · · ·	.9980	0.2733	.99520	0 0,1772 0,33 <u>2</u> 4	0.99389 .99 2 66
				0.2771 0.6177	.995 2 9 .99433	$0.3324 \\ 0.7884$.99161 .99013
Taylor and	Moore, 1908			0.7884	.99425	0.1 DOT	• > > > > > > > > > > > > > > > > > > >
mol %	đ	mol A	đ	m	η	a	η
	2	15°		25	50	35	0
0 0.2914	0.99707	0.7878	0.99815	0 2722	895	0	725
0.2914	0.99713 0.99755	1.148	0.99935	0.2733 0.2771	1105 1109	$0.1772 \\ 0.3324$	818 907
		15°		0.6177 0.7884	1447 1626	0.7884	1298
0.2935	0.99401	0.7909	0.99467	0.7864	1020		
0.4747	0.99426	1.0922	0.99570				
in .	η	m	n	H			
2	25°		35°				
0	895	0.2935	798				
0.2914 0.5893	979 1086	0.4747 0.7509	846 936	H			
0,7878	1173	1.0922	1049				
1, 148	1359						

Water + Tetrapropyl ammonium chloride ($C_{12}H_{23}NC1$)	D
David, 1910	Ralston and Hoerr, 1942 (fig.) M η (H ₂ 0=1) M η (H ₂ 0=1)
0° 25° 35° 56° 0.0 0.9999 0.9971 0.9942 0.9853 0.23 .9997 .9968 .9938 .9850	30° 0 1 0.74 1.5 0.3 1 0.78 2.4 0.45 1 0.80 4.0 0.53 1 0.84 9.0
1.73 .9995 .99645 .9933 .98465 3.12 .99915 .99595 .9928 .9839 6.87 .9991 .9952 .99195 .9826 9.75 .99895 .99445 .9908 .98155 10.90 .9992 .99465 .9910 .98155 15.69 .99965 .9940 .9901 .9798 23.28 1.0030 .99465 .9902 .9736	Water + Methyldodecylammonium chloride (C ₁₃ H ₃₀ NC1)
27.70 .0055 .9959 .9909 .9792	Broome, Hoerr and Harwood, 1951
Water + Octylammonium chloride (C _a H _{2O} NC1)	% f.t. % f.t.
Ralston and Hoerr, 1942	0 0 56 27 0.1 0 59 27 0.3 15 70 32 10 20 86 48 tr.t.
N λ 20°	20 23 100 177 40 25 (1+2)
0.7277 48.25 0.9348 45.08	Water + Dimethyldodecylammonium chloride
0.7655 71.56 0.9570 66.42 60°	Broome, Hoerr and Harwood, 1951
0.6370 102.5 0.9001 94.80	% f.t. % f.t.
Water + Decylammonium chloride ($C_{10}H_{2\mu}NC1$)	0 0 74 + 16 20 9 88 38 tr.t. 40 - 0.1 94 145 56 - 0.2 E 95 145 60 + 3 100 (1+2)
N λ 20° 0.5900 33.55	Water + Dodecylammonium chloride (C ₁₂ H ₂₈ NCl)
0.5900 33.55 0.8270 33.12 40°	Broome, Hoerr and Harwood, 1951
0.5232 59.35 0.8890 59.02	% f.t. % f.t.
60° 0.6600 79.35 0.8250 77.68	0 0 60 36 0.1 0 68 37 tr.t. 0.3 25 80 52 10 26 87.5 57.5 20 27 100 178 40 32 (1+2)

Water + Trimethyldodecylammonium chloride (C_{15} N $_{5}$ $_{4}$ NC1)	Water + Te	traethy lammo	nium bromide ($C_8H_{80}NBr$)
Broome, Hoerr and Harwood, 1951	Taylor and	Moore, 1908		
% f.t. % f.t.	m	đ	m	đ
0 0 70 0 20 0 80 3 40 - 0.2 87 5 (1+2) 50 - 2 90 50 61 - 5 E 100 228	0 0.2819 0.5082	0.99707 1.0071 .0149	25° 0.7568 1.1363	1.0227 .0342
	0 0.3309 0.4524	0.9939 1.0054 .0084	0.7213 1.1367	1.0180 .0305
Water + Tetradecylammonium chloride ($C_{14}H_{3.2}NC1$)				
Ralston and Hoerr, 1942	Taylor and	Moore, 1908		
N λ	m	ŋ	m	n
60° 0.4574 56.46	0 0.2819 0.5082	895 980 1059	0.7568 1.1363	1152 1314
Water + Hexadecylammonium chloride (C ₁₆ H ₃₆ NCl)	0 0.3309 0.4524	725 799 825	0.7218 1.1367	910 1042
Ralston and Hoerr, 1942 N A				
60° 0.1880 43.78	Water + Te	traethylammo	onium iodide ((C ₄ H _{2O} NI)
	Walden, 19	06		
		t	% d	
Water + Cetyl trimethylammonium bromide ($C_{1.9}H_{\rm H_2}N{\rm Br}$)		25 0 1	31.44 0.997 15.54 0.999	7 1 99
Adam and Pankhurst, 1946 (fig.) % f.t. % f.t.	Traube, 189	95		,
	×	đ	%	đ
1 25	0 2.753 5.271	0.99823 1.00519 1.01257	9.946 16.041	1.02636 1.04508

Pitha and S	Smith, 1948	(fig.)		%	f.t.	%	f.t.
%	f.t.	%	f.t.	1	-0.2	12	- 3.3
9.1 16.7 23.1 28.6 33.3	5 23 35 42 45	35 35 37.5 41.2 44.4	47.5 50 53 57 62	4 5 6 7 8 9 10	-1.0 -1.3 -1.6 -1.9 -2.2 -2.5 -2.8 -3.0	13 20 25 30 31.3 35 40.3	- 8.0 5 0
ater + Gua	nidine hydroc	chloride (CH	6N ₃ C1)	House and Wo	olfenden, 1952		
ammann, 19	15			mo	01 %	%	f.t.
%		% .00°	p	- 10 12 16	0.94 46 2.99 51 3.65 59	. 84 . 92 . 78 . 64 . 83	0 15 25 40 100
7.72 20.34 30.77	740.1 704.4 666.3	39.45 49.67 58.54	626.2 569.4 508.7			. 65	
				Perkin, 189	6		
	nidine perchl i and Alba, l	_	₃ 0 ₄ C1)	%	1	d .5°	20°
%		đ	5°	42.53	1. 0.	0868 9991	1.0842 0.9971
4.98	1.0	2043 1.0	1778		%	(a)magn	•
4,98 9.99 14.98	.0	.0 4242	3905 6099	4	2,53 1.	.6251 at	14.2
Water + An Tammann, 19	iline hydroch 915	loride (C ₆ H	₈ NC1)	Barbier and	Roux, 1890	disper	sive power
%	р	%	p		6.0 8. 8.0 9.	2 (.381
10.45 19.30 30.85	741.4 723.7 694.8	39.42 60.47	670.7 589.4		10.0 10. 20.0 10. 30.0 10. 40.0 10.	4 (9 (1.407 1.464 1.524 1.585

Water + An	niline nitrate	$(C_6H_8N_2O_3)$		Water + Ani	line salicyla	te (C ₁₃ H ₁₃ O	3 N)
Tammann, l	.915			Guthrie, 18	78		
*	p	Z	p	K	f.t.	Я	f.t.
17.59 30.04	734.6 714.3	46.34 49.73	682.2 674.0	0.24 0.28	-0.06 E	0.65 0.77	+ 6.2 +16.8
37.46 Guthrie, 1	701.6	56.31	654.9	Water + Anil	ine arsenylta	rtrate (C _{1 c}	H ₁₂ O ₇ NAs)
				Yvon, 1910			
%	f.t.	<u>%</u>	f.t.	с	α _D	c	αD
2 4 6 8	-0.4 -0.8 -1.1 -1.5	10 10.61 10.94 15.58	- 2 - 2:2 E 0 +13.1	1 2 3	+14.00 24.12 35.33 40.88	6° 16 17 18	64.62 65.26 66.16
Water + An	iline sulfate	(C ₆ H ₉ O ₄ NS)		1 2 3 4 5 6 7 8 9 10 11	45.89 50.00 52.85 55.50 57.61 58.50 59.09 61.11	19 20 21 22 23 24 25 26 27	66.21 66.60 67.78 68.13 69.21 68.91 69.12 69.00 69.26
K	f.t.	K	f.t.	13 14 15	62.30 62.71	28 29 30	68.88 68.62
1 2 4.5 4.85	-0.1 -0.2 -0.6 -0.9 E	4.91 5.84 15.35	0 +13.1 100.0	Yvon, 1910	64.08	30	68.86
					%	f.t.	
Mater + Phe	enylammonium ph	enolate (C ₁	2H ₁₃ NO)		29.50 32.28 65.30 88.00	15 20 35 1 00	
Я	sat.t.	Я	sat.t.				
3.8 4.4 6.56 19.6 34.37 41.2	38.5 47.5 79 131.5 140.5 138.5	53.6 63.2 75:4 83.38 91.4	136.5 132.5 116.5 79 38.5	Water + Dim	•	hydrochlorid	le (C ₈ H _{1 2} NCl)
				× ×	p	%	p
	diline pyrogall	ate (C ₂₄ H ₂₇	0 ₅ N ₃)	10.72 18.94 22.69	730.1 698.2 677.1	34°.49 46°.56	606.5 514.0
Guthrie, 1					0//.1		
*	f.t.	%	f.t.				
9.09 20.00 23.93	-1.0 -2.7 -4.6 E	33.65 46.00 100	+17.8 126-128	:			

Water + o-Phenylenediamine hydrochloride ($C_6H_{10}N_2Cl_2$)	later + Coniine acetate ($C_{10}H_{21}NO_2$)
Perkin, 1896	ecchini, 1893
% (α) magn.	% (α) _D t
15° 18.264 1.2826	31.5614 1.16 26.6
13.397 1.1869 20.08 1.2884	
V	Water + Nicotine hydrochloride ($C_{10}H_{15}N_2Cl$)
% d 15° 2 5°	Schwebel, 1882
0 0.9991 0.9971 18,264 1.0637 1.0599	% d % d
13.397 1.0448 1.0417 20.08 1.0678 1.0641	20° 0 0.9982 30.023 1.0520 9.988 1.0158 42.870 1.0845 19.798 1.0337
Water + Phenylethylamine hydrochloride (C _B H ₁₂ NCl)	
Leithe, 1929	ennari, 1895 - 1896
, c d	% d
15°	20° 36.852 1.06681
24.93 25.86 1.0370 14.62 14.95 1.0216 3.23 3.25 1.005	18.414 1.02956
So	chwebel, 1882
Leithe, 1929	% (α) _D % (α) _D
c (α) _D	20°
15° 25.86 +7.4 14.95 +5.4 3.23 +3.5	9.988 +14.44 30.023 +16.75 19.798 +15.77 42.870 +20.02
	Gennari, 1895 - 1896
Water + Pipecoline hydrochloride d (C ₆ H ₁₄ NC1)	β (α) pale dark red yellow green blue blue
Leithe, 1929	20°
	5.852 15.21 19.62 24.29 27.92 - 8.414 12.13 15.45 18.72 21.88 23.84
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	

Water + Ni	cotine s	ulfate	(C ₂₀ H ₃₀ N	μ 0 μ S)
Schwebel,	1882			
%	đ		K	<u>d</u>
0	0.99	201	42.930	1,1225
9.946	1.02	53	49.193	1 14200
20.004 33.091	1.05 1.09	37 24	69.445	1.2078
Gennari,	1895 - 18	196		
	%		d	
		20°		
	45.437 35.243 31.460	, }	1.1310 1.1099 1.0895	0 12
	31.460	j	1.0895	8
Schwebel,	1882			
**************************************	(α) _D	%	(α) _D
•		20	0	
9.946	+1-	4.52	42.930	+16.44
20.004 33.091	+1-	4.23 5.79	49.193 69.445	+16.87
Gennari,	1895 - 13	3 96		
%			(a)	
	red	yellow	green	pale dark blue blue
)°	
45.437	13.07	16.54	20.51	23.00 25.87 22.48 24.90
45.437 35.243 31.460	12.49 12.19	16.00 15.66	19.45 19.20	22.48 24.90 21.82 24.74
Water + N	icotine a	cetate	(C ₁₂ H ₁₈ !	
Schwebel,	1882			
%	đ		Я	đ
		20°		
	1.006		23.002	1.0364

Gennari, 1	895 - 18	896						
×		1	%		đ			
53.721 44.300 26.481	1.08 1.00 1.04	844	24.276 0	1 0	.03792 .99823			
Schwebel, 1882								
%	(a	_ a ^{(:}	%	((α) _D			
4.856 11.087	+13 +14	3.81 1.75	23.002	+]	17.10			
Gennari, 1895 - 1896								
%	red	yellow	(α) green	pale blue	dark blue			
	160	20		biue	DITTE			
53.721 44.300 26.481 24.276	16.44 14.30 13.21 13.00	21.36 18.85 17.35 16.96	25.81 22.83 21.23 20.40	29.05 26.57 23.98 23.50	31.37 25.84			
Water + Betaine hydrochloride ($C_5H_{12}O_2NC1$)								
Stolzenbe	rg, 1914							
<u> </u>	f.	t	%	f	.t.			
28.99 28.84 37.28 38.76 46.75 46.76	- 5 - 5 +20 20 45	.7 .7 .3	50.34 50.53 56.20 56.29 59.66 61.67	7 7 9	7 7 8.2 8.2 5 5			

Water + Betaine hydrobromide ($C_5H_{12}O_2NBr$)

Stolzenberg, 1914

%	f.t.	%	f.t.
25.38 24.34 39.16 39.17 51.71 50.88	- 5 - 5 +20.6 20.6 45.3 45.3	54.81 54.85 61.96 61.88 66.04 66.18	57.3 57.3 79 79 95

Water + Betaine basic hydroiodide (C ₁₀ H ₂
--

Stolzenberg, 1914

%	f.t.	%	f.t.
17.77	+ 1.7	45.25	46.5
17.55	1.7	44.97	46.5
28.55	18.5	53.01	62
28.38	18.5	63.61	87

Water + Betaine hydroiodide ($C_5H_{12}O_2NI$)

Stolzenberger, 1914

%	f.t.	%	f.t.
35.16	- 4	69.20	47.5
35.31	- 4	74.02	62.3
51.17	+28	73,74	62.3
61.12	28	76.59	76
70.45	47.5	76.36	76

Water + Betaine sulfate ($C_5 H_{13} \, \theta_6 NS$)

Stolzenberg, 1914

K	f.t.	%	f.t.
45.99	0 20	68.86	44
56.87		76.58	62.2

Water + Betaine phosphate (C5H14O6NP)

Stolzenberg, 1914

%	f.t.	%	f.t.	_
31.39 42.10 54.90	0.5 19.5 45	62.68 69.52	64 80	

Water + Novocaine iodide ($C_{13}H_{21}N_2O_2I$)

Holleman and de Jong, 1940

$$L_1 + L_2 + C = 32^{\circ}$$

Water + Novocaine perchlorate ($C_{13}H_{21}N_2O_6C1$)

Holleman and de Jong, 1940

C.S.T. =
$$78^{\circ}$$
 $L_1 + L_2 + V = 56^{\circ}$

Water + Novocaine thiocyanate ($C_{1\, 1_{\!4}}H_{2\, 1}N_{\!3}\, 0_{2}S$)

Holleman and de Jong, 1940

C.S.T. =
$$54^{\circ}$$
 $L_1 + L_2 + C = 36^{\circ}$

Water + Cinchonidine sulfate ($C_{3.8}H_{4.6}N_{\rm h}0_6S$)

Polak, 1914

mol %	f.t.	mol %	f.t.
0 0.15 0.27 0.62 1.03 1.44 1.89 2.56 3.03 3.44	0 73.6 86.8 95.3 98.7 101.0 103.0 106.2 109.1 111.4 120.0	5.63 6.7 6.7 8.78 10.54 12.34 14.8 17.64 32.27	130.0 135.8 137.8 147.5 150.0 152.7 156.0 163.5 187.0 242.0

Water + Quinine sulfate ($C_{40}H_{50}N_{4}0_8S$)

Polak, 1914

$\begin{array}{cccc} 0.11 & 104.5 & 1\\ 0.23 & 120.0 & 1\\ 0.70 & 127.0 & 1 \end{array}$		
2.75 135.5 1 3.7 141.0 2 5.2 151.5 3	7.5 155.0 0.5 160.5 0.9 162.0 1.7 164.0 1.7 164.0 1.8 164.5 1.61.5 1.0.0 173.5 11.8 176.5 10.0 232.5	

130	
Water + Glutamic acid hydrochloride ($C_5H_{1.0}N$	$0_{\rm u}$ Cl) Water + Triethylsulfonium iodide (${\rm C_6H_{15}IS}$)
Stolzenberg, 1914 (fig.)	Nasini and Costa, 1891
c f.t. c f.t	
34.5 10.0 57.0 60. 38.5 20.0 62.0 70.	0
42.5 30.0 68.0 80. 46.5 40.0 74.0 90.	0 10 0.99973 0.35413 10.3 1.01173
52.0 50.0 81.0 100.	0 9.6731 10.7 1.03366 11.4625 9.4 1.03925 27.5240 12.3 1.10516
	1,1000
Water + 1-Hyoscyamine d camphorsulfonate ($C_{2.7}H_3$	Nasini and Costa, 1891
Carr and Reynolds, 1910	% f.t. % f.t.
c (a) _D c (a) _D 1.4078 - 0.180 9.4333 - 1.050 2.1684 - 0.275 12.9450 - 1.340
at room t. 20 -5.25 8 -7	.50
	Nasini and Costa, 1891
	\mathcal{K} \mathbf{H}_{α} \mathbf{H}_{β} \mathbf{H}_{γ}
Water + Trimethylsulfonium iodide (C_3H_9IS	10°
Nasini and Costa, 1891	0 1.33181 1.33782 1.34108
% t d	3.5413 1.33722 1.34378 1.34723 9.6731 1.34739 1.35443 1.35886
22.5495 14.6 1.10962	11.4625 1.35889 1.35889 1.36216 27.5240 1.38823 1.38823 1.39310
21.7903 14 1.10554 0 14 0.99927	
	Dimethylthetine hydrobromide ($C_{14}H_{9}O_{2}BrS$)
Nasini and Costa, 1891	Nasini and Costa, 1891
% f.t.	% t d
1.5078 -0.280 4.3279 -0.680	0 15 0.99913 13.0623 15.4 1.05750 24.1699 13.5 1.11203
	% n
	\mathbf{H}_{α} \mathbf{H}_{β} \mathbf{H}_{γ}
Nasini and Costa, 1891	15°
β n H _α H ₃ H,	0 1.33150 1.33751 1.34077 13.0623 1.35274 1.35953 1.36324 24.1699 1.37249 1.38319 1.38416
14°	
0 1.33156 1.33757 1.34083 21.7903 .36811 .37613 .38074	
22.5495 .36971 .37782 .38252	

Water + Trimethyl phosphate ($C_3H_9P0_{i_4}$)	
Pagel and Maxey, 1941	S. WATER + ALCOHOLS .
mol % f.t. mol % f.t.	TVI MATED , METRYL AND ETHYL ALCOHOLS
0.0	11 c an 65 79 5
25 - 70 30 - 70 35 - 58 41 4 45 45 25 38 47 34 34 49 40	Bergstrom, 1910

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WATER + TRIMETHYL PHOSPHATE

Water + Trimethyl phosi hate ($C_5H_9PO_{14}$)	
Pagel and Maxey, 1941	S. WATER + ALCOHOLS .
mol % f.t. mol % f.t.	TYI WATER A METHYI AND ETHYI ALCOHOIS
0.0	11 6 60 65 78 5
41 4 45 45 25 38 47 34 34 49 40 -	Bergstrom, 1910

	Bredig and Bayer, 1927
Wrewski, 1912	% b.t. % b.t.
% P P1 P2 L V	L V L V
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	100 100 64.71 34.94 76.64 80.2 92.50 95.31 66.9 34.38 78.12 79.0 85.62 93.86 68.0 31.87 74.96 81.6 79.44 90.93 70.0 28.33 70.83 82.3 72.21 88.89 71.3 26.34 60.22 83.2 66.65 87.52 72.7 21.21 68.09 85.0 60.42 86.00 73.8 20.36 62.41 86.6 49.05 82.82 76.2 15.36 57.81 88.9 47.05 79.96 76.7 12.86 54.25 90.3 42.17 79.04 77.8 9.07 41.28 92.9 41.11 78.88 78.0
40.05 83.34 136.4 35.8 100.0 44.47 84.73 143.7 34.9 103.8 54.38 87.37 160.5 32.8 127.7 61.23 88.88 173.1 31.5 141.6 69.18 91.18 185.7 27.3 158.4 79.82 94.14 207.5 20.7 186.8 91.66 97.55 235.3 10.1 225.2 100.00 100.00 260.7	Ferguson and Tunnell, 1929
59,44°	g p % p
0 - 145.4 145.4 - 33.62 77.76 317.0 106.9 210.1	L V L V
40.15 80.68 342.4 102.2 240.2 46.95 83.35 368.7 96.6 272.1 54.03 85.41 393.6 91.7 301.9 61.27 87.55 420.4 84.8 335.6 68.89 89.63 450.6 76.9 373.7 80.00 93.11 497.2 57.8 439.4 86.62 95.18 530.4 43.8 486.6 91.52 96.89 557.0 30.1 526.9 100.00 100.00 609.3 509 3	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Bredig and Bayer, 1927	Cornell and Montonna, 1933
% p % p	wt% mol% wt% mol% L V
L V L V 39.76° 49.76°	20°
8.19 37.94 68.1 8.33 40.17 119 15.36 59.86 85.6 19.78 61.59 157 15.36 60.50 86.3 23.57 66.01 169 21.50 74.48 97.6 32.50 75.12 199 24.21 74.08 103.4 39.59 81.36 217 27.73 76.64 109.8 46.14 84.78 236 31.20 78.56 118.4 65.31 89.03 288 31.13 79.04 119.1 73.84 91.96 306 33.76 80.23 122.4 81.19 94.16 326 37.94 82.52 132.0 87.92 96.64 344 1.67 83.38 138.2 94.16 97.87 373 44.00 85.00 142.7 96.89 98.50 39 51.25 88.04 155.3 100.00 100.00 406 57.90 89.26 167.4 56.00 88.00 161.5 64.30 90.50 1755.4 68.48 184.3 72.17 91.74 188.2 79.96 93.10 202.5 79.96 93.10 202.5 80.19 93.36 206.4 88.30 97.34 223.1 88.30 97.34 223.1 95.76 98.42 244.3 100.00 100.00 259.8	.0 3.0 1.7 18.5 11.3 17.8 17.8 17.8 17.8 17.8 17.8 17.8 17.8

Uchid	a and K at	o, 1934				Othme	r and Moi	rley, 1946			
L %	v	b.t.	L	% V	b.t.	L	% V	L L	v	L	¥ V
0.28 2.40 3.56 4.27 6.16 9.27 9.50 12.18 12.86	1.53 16.43 21.81 25.05 30.68 39.36 40.95 47.52 49.24 53.33	99.42 95.52 93.76 92.97 90.36 87.61 87.08 84.33 83.82	43.71 48.14 49.33 52.35 61.95 67.35 74.79 81.72 85.78	75.16 77.26 77.32 78.50 83.28 85.72 89.33 92.00 94.29	73.00 72.46 72.27 71.41 69.96 69.35 68.23 67.10 66.23	13.7 28.5 60.8 81.4 92.8	42.7 65.1 83.3 91.5 96.7	517 10.2 32.3 49.8 71.9 84.2	27 8 61.4 75.9 86.7 92.1	17 1 30 9 55 (77 8	53 8 77 1
16.62 10.86 24.91 28.41 36.73 41.64	58.05 61.90 65.30 71.21 74.10	81.95 79.45 78.17 76.24 74.58 73.05	85.94 89.06 93.41 93.71 98.69	94.18 95.35 97.35 97.47 99.56	66.33 65.99 65.38 65.23 64.73	Andree	ev and Zi	rlin, 1954 V at b	L	×	v
Othmer	and Benen	ati 194	5	ر دیده اسی میں اسی کی کار اس کا اسی اسی اسی اسی اسی اسی اسی اسی اسی اس	,	0.1		300 1.66 8.95) mm 32.28 50.00		74 . 20 83 . 00
% L		b. t.	L %	v	b. t.	5.0 15.0	00	29.60 55.10	80.00		92.56
760	0 mm	·	500	هـ. مـر مـر س مـ مــ مــر مــر							
4.6 9.4 15.7 21.7 32.1 42.5 53.4 63.2 72.7 81.7	26.7 40.2 53.3 60.2 68.0 74.5 79.1 82.9 88.3 92.0 95.6	92.7 88.1 84.0 80.8 77.4 74.8 72.4 70.5 68.7 67.3 66.1	2.5 5.5 11.4 21.2 32.5 46.3 52.3 61.4 70.9 77.2 88.0	16.3 31.0 48.4 62.2 69.6 78.2 80.4 84.5 88.7 91.3 95.8	85.0 80.2 75.4 70.0 66.5 63.1 62.0 59.7 58.7 57.7 56.0	Green wt L 0 5 10 20 30	v V 26.9 44.6 61.7 72.0	100 95.3 91.7 86.0 81.8	0 5 10 20	0 27.8 42.5 60.2	81.7
35	O mm		20	0 mm		40 50	78.5 82.9	78.8	40 50	69.2 75.2 79:8	73.2
3.3 5.1 10.6 17.9 25.6 33.9 44.5 52.3	21.0 30.1 47.8 60.0 67.1 72.6 78.6 81.4	74.7 72.6 67.6 63.2 59.6 57.3 55.0 53.2	1.3 2.5 6.4 15.6 27.4 42.8 54.3 62.5 72.2	9.5 17.0 36.3 59.0 69.6 78.6 84.8 87.2 90.5	64.8 63.1 59.2 52.0 47.3 43.3 40.9 39.5 38.1	60 70 80 90 100	86.2 89.4 92.4 95.9 100	76.4 74.2 71.8 69.5 67.0 64.6	60 70 80 90 100	83.8 87.8 91.5 96.0 100	71.2 69.4 67.7
62.4 74.9 87.4	86.2 91.5 95.9	49.0 47.4	79.5 88.5	93.7 96.6	37.1 35.8	Othmer	, Friedla	and and Sch	iebel, (u	inpubli	ished)
	سرون میراند این نمی دیراند اند. در در در مراب بایداند این این که انداد	ر می خوانی کی دیا ان است. ر مرسی کی این کی شده افغان	نے منعلق کی کی دنی جدید جدید در نے جہد کی دن کی دنی جدید جدید	ر میں احتیادی حیارت احداد احداد وعیدادی حیارت احداد احداد احدادی	هر معلی مشاور مثاب شدو شدو آمدو شدو کند ها را بندو مساور شدو شدو شدو شدو شدو شد	mol9		b.t.	mol%		b. t.
						L	V	760 m		V 	
						0 14.50 20.50 26.00 40.00	0 47.00 54.50 60.00 70.50	100 5. 82.6 7	5.50 79 1.30 87 8.50 95	.50 .20 .10	71.0 68.5 65.9 64.6

Konov	valow, 1884					Dulits	kaya, 194	5		
t	р	t	р	t	p	mo1%	р	P ₂	P ₁	
()%	24.54		49,2	16%		-,	25°		
16.5 26.4 40.4 50.25 59.2 70.7 80.45 90.0 91.25	13.7 25.4 56.5 92.9 142.8 239.8 359.4 523.4 549.9	17.25 29.9 43.2 53.6 64.9 84.25	30, 15 62, 6 126, 2 207, 25 345, 7 750, 8	17.0 29.9 43.3 53.5 65.5 76.7	44.5 90.6 177.3 284.0 479.9 747.6	0.0 8,73 19.00 34.17 49.43 69.19 84.92 100.00	23.7 37.5 53.0 69.8 82.3 98.5 112.0 124.0	0 15.9 32.6 51.3 65.3 86.9 105.1 124.0	23.7 21.6 20.4 18.5 17.0 11.6 6.9	
12.55 29.75 43.7 54.0 65.7	39.8 104.2 206.2 330.2 543.45	72.3 18.65 29.25 43.2 53.5 65.5 71.15	63.7 112.8 224.6 357.8 591.7 747.7	15.0 29.3 43.0 43.15 53.9 65.4	72.4 153.4 292.4 295.0 470.3 756.6	0.0 8.73 19:00 34.17 49.43 69.19 84.92 100.00	92.5 143.0 196.5 244.5 286.0 333.0 406.0	0 54.1 115.6 173.0 223.3 288.2 348.7 406.0	92.5 88.9 80.9 71.5 62.7 44.8 24.3	
							1.45	62.5°		
	sky, 1900					0.0 8.73 19.00 34.17	167.5 253.0 342.5 422.5 488.0	92.9 192.8 295.2 376.0	167.5 160.1 149.7 127.3	
t	P	t	P			49.43 69.19	488.0 565.0	376.0 488.1	112.0 76.9	
18.4 29.9 43.2 53.6	32.9 64 129 212	4,3% 65,8 65,9 73,5 84,2	363 365 502 757	.8	پيشونسو شد کني ان و منداسو ا	84.92 100.00	565.0 628.0 688.0	488.1 585.6 688.0	42.4 0	Jahannahi 1991
					,	1	VSKI AND I		1910 and E	Bakowski, 1931
P 2						* 	700 mm	b.t. 760 mm	800 mm	, نعب مند مني مند من المواقعة الدومة المواقعة المو
	r, Thomson	and Macle	nnan, 193	33		0 10	9 7.72 89.51	100.00 91.72	101.44 93.14	
2.02 4.04 6.20 7.91 11.45 20.17 39.73	23.0	92 25° 3.8 7.6 11.7 15.1 21.5	22. 21.	9 3 2 2 1	Period all all all and an and annual a	40 50 60 70 80 90	89.51 83.97 80.00 76.97 74.44 72.17 69.98 67.77 65.32 62.53	86.16 82.17 79.10 76.54 74.29 72.08 69.87 67.40 64.57	87.57 83.56 80.48 77.91 75.65 73.44 71.22 68.75 65.92	
39.73 65.79 81.37 100.00	93.5 97.2	35.8 59.6 85.7 104.6 126.6	10.	8 5 26		Aldrich	and Querf	eld, 1931	. های های در این که این باشتند و این در این در این در این در این در این در این در این در این در این در این در ا در این داشتند این داشتند این در این در این در این در این در این در این در این در این در این در این در این در ا	د است. ۱۳۰۰ می داد است. این این این این این این این این این این
<u> </u>				•		vol%	b , t.	vol%	b.t.	
						·	760			
					1	10 20 30 40 50	92.8 87.8 84.0 80.9 78.3	60 70 80 90 100	75.9 73.7 71.3 68.7 64.6	

Janecke, 1933	Abegg, 1894
% b.t. % b.t.	N f.t.
760 mm 8.2 93 54.6 76 16.4 88 65 73 34.7 81 76 70	1.007 -1.95 2.015 -4.045 3.022 -6.395 4.030 -9.07 5.037 -12.055
Griswold and Buford, 1949	Jones, 1904; Jones and Getman, 1904
mo1% b.t. mo1% b.t.	و الما الما الما الما الما الما الما الم
6.9 91.1 39.6 76.8 11.7 87.8 47.9 74.5 17.4 83.9 68.0 70.5 24.4 - 83.6 67.8 100.0 64.7	0,5 -0,935 6.0 -15,000 1.0 -1,898 7.0 -19,000 3,0 -6,440 8.0 -23,500 4.0 -9,130 9.0 -28,500 5,0 -11,500 10.0 -33,500
	Baume and Borowski, 1911
	mol% f.t. mol% f.t.
Silgardo and Storrow, 1950 mol% b.t. mol% b.t. 0.0 100 69.0 76.7 15.0 96.4 85.0 70.1 36.5 89.7 98.0 65.3 52.5 83.9 100.0 64.6	100 -95.7 44.87 -71.5 84.05 -113.5 41.79 -64.7 73.21 -128.7 38.44 -59.1 64.26 vitreous 36.20 -54.2 55.57 -100.8 33.81 -50.2 50.91 -87.5 30.33 -44.0 47.81 -78.1 27.24 -38.7
	Pushin and Glagoleva, 1922-31
Novelle and Tenners 1070	mol% f.t. E min.
Novella and Tarraso, 1952 mol% b.t. V	10
93.7 97.3 66.0 96.6 98.8 65.1 98.9 99.7 64.9 100.0 100.0 65.0	Aldrich and Querfeld, 1931 % f.t. % f.t.
	10 -4.6 40 -30.2 20 -10.7 50 -43.0 30 -19.3 60 -57.3
11	

Pictoring 1932	Properties of phases									
Pickering, 1932 **Fit. ** f.t.	Trauhe, 1885									
% f.t. f.t. 113 disc, 1385 1,252 -0.73 32,231 -29,15 % d d 2,398 -1,41 34,687 -33,05 15° 15° 3,739 -2,30 37,284 -36,15 15° 4,900 -2,98 39,394 -39,30 0 0,9951 15,25 0,9751 8,237 -5,44 45,027 -47,15 1,96 .9955 16,67 .9731 8,237 -5,44 45,027 -47,15 1,96 .9955 16,67 .9731 1,875 -7,83 48,046 -51,25 3,85 .9922 23,08 .9645 15,136 -10,54 50,101 -55,60 5,66 .9892 28,57 .9568 18,217 -13,13 52,601 -59,00 7,41 .9865 33,33 .9497 24,074 -19,46 57,112 -67,50 10,71 .9816 44,44 .9311 24,072										
Benjamin, 1932	Dittmar and Fawsitt, 1887									
mol% f.t. E	% d % d 0° 15.56° 0° 15.56°									
80.0 -116.7 - 87.2 -110.2 -128.5 91.9 -106.0 -129.2 100.0 -98.0 -	0 0.99987 0.99907 51 0.92691 0.91661 1 .99806 .99729 52 .92507 .91465 2 .99631 .99554 53 .92320 .91267 3 .99462 .99382 54 .92130 .91066 4 .99299 .99214 55 .91938 .90863 5 .99142 .99048 56 .91742 .90657									
Ewert, 1937	7 .98843 .98726 58 .91343 .90239 8 .98701 .98569 59 .91139 .90026 9 .98563 .98414 60 .90917 .89798									
mol% f.t. E mol% f.t. 36.4 -58.2 -104.3 63.0 -108.6 51.0 -90.1 -104.3 65.4 -105.6 53.0 -95.1 -104.5 69.4 -116.2 59.8 -108.6 - 75.2 -121.8 62.2 -105.3 - 100.0 -102.5 (1+1)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$									
Ross, 1954	21 .97120 .96666 72 .88237 .87040 22 .97007 .96524 73 .88003 .86779									
# f.t. # f.t. 10 -6.5 50 -55.4 20 -15.0 60 -75.0 30 -26.0 64 -84.6 40 -39.7	27 96430 95802 78 86806 85542 28 96310 95655 79 86561 85290 29 96187 95506 80 86314 85035 30 96057 95367 81 86066 84779 31 95921 95211 82 85816 84521 32 95783 95053 83 85564 84262 33 95643 94894 84 85310 84001									
Tammann and Pillsburg, 1928	34 .95500 .94732 85 .85055 .83738 35 .95354 .94567 86 .84798 .83472 36 .95204 .94399 87 .84539 .83207 37 .95051 .94228 88 .84278 .82938 38 .94895 .94055 89 .84015 .82668									
mol% velocity of cryst. t 36.0 3.57 -6668 36.6 3.16 -6669 37.7 2.90 -6870 38.7 2.32 -65.568.5 41.4 1.67 -6568	39 .94734 .93877 90 .83751 .82396 40 .94571 .93697 91 .83485 .82123 41 .94400 .93510 92 .83218 .81849 42 .94239 .93335 93 .82948 .81572 43 .94076 .93155 .94 .82677 .81293 44 .93911 .92975 .95 .82404 .81013 45 .93744 .92793 .96 .82129 .80731 46 .93575 .92610 .97 .81853 .80448 47 .93403 .92424 .98 .81576 .80164 48 .93229 .92237 .99 .81295 .79376 49 .93052 .92047 .100 .81015 .78589 50 .92873 .91855 .92873 .91855									

× ×		đ		Getm	an, 1906				
	0°	9.7°	19.7°	t	10%	20%	d 30%	404	504
0 5.008 10.018 20.032 30.023 40.028 50.022 60.020 70.063 79.959 89.990 95.062 100.000	0.99987 .99141 .98422 .97246 .96039 .94585 .92862 .90895 .88678 .86354 .82382 .81018	0.99975 .99118 .98342 .97000 .95411 .94045 .92230 .90195 .87945 .85548 .82900 .81530 .80132	0.99829 .98961 .98154 .96567 .95158 .93467 .91573 .89475 .87158 .84724 .80630 .79202	10 15 20 25 30 35 40 63	0,9863 ,9857 ,9844 ,9833 ,9822 ,9811 ,9800 ,9714 60% 0,9191 ,9160 ,9129	0.9768 .9751 .9737 .9723 .9720 .9716 .9708 .9569 .70% 0.9015 .8976 .8937	0.9672 .9652 .9619 .9585 .9570 .9556 .9541 .9399 .80% 0.8735 .8704 .8671	40% 0.9534 .9501 .9490 .9466 .9443 .9420 .9397 .9226 90% 0.8463 .8419	
Drude, 1897				25 30 35 40 63	.9099 .9063 .9026 .8990 .8808	.8898 .8857 .8816 .8784 .8619	.8643 .8608 .8573 .8511 .8308	.8331 .9295 .8240 .8196	•
% d	%	ð		===					
0 0.9991	5.5° 56.0	0.9065		, Chene	veau, 1907				
5.7 .9893	60.5	. 8970				%	đ		
11.0 .9815 15.0 .9753	65.2 69.8 74.6	.8863 .8751		-		20			
19.5 .9689 25.0 .9595	78.4	.8637 .8545			0		0.998		
31.4 .9514 35.0 .9457	80.1 84.8	.8501 .8378			100	.36	.969 .831	4	
39.7 9376	89.9	. 8243							
45.2 .9275 45.8 .9246 51.1 .9163	$\begin{array}{c} 94.6 \\ 100.0 \end{array}$.8111 .7959		Ge tma	n and Wils	on, 1908			
				%	d	511, 1500	đ	%	đ
				 			90°		-
Jones, 1904; Jo	nes and Get	man, 1904	. شند استرائي جيزين بن بن جديد دي بند بني سار	0	0.99823	40.94	0.93295	72.90	0.86321
M d	M	d		7.72 15.60	.98282 .97129	41.80 56.40	.93022 .90142	86.81 94.34	. 82979
0	10			37.70	.93939	65.30	.88155	100.00	. 809 64 . 7 9359
0 0.999868 0.5 .995300 1.0 .992284 2.0 .988128	6.0 7.0 8.0	0.970620 .964052 .960780 .955864		Dorosh	ievski, 191	.0			
3.0 .980444 4.0 .975092	$\frac{9.0}{210.0}$.949904 .944 2 00		%	đ	%	đ	×	đ
Dunstan and Thol		Dunstan,19	04 and 1905	0.00 5.00 10.01 15.01 20.00	0.99913 .99030 .98238 .97518 .96816		0.96111 .95361 .93720 .91856 .89774	69.99 80.00 90.01 100.00	0.87511 .85648 .82393 .79577
% 20°	d 2 5°	30°					· · · · · · · · · · · · · · · · · · ·		
احد فين ليدر خال خين اسم غلق الميارات، حد اسد فين غين سي بين سمر ه				Theve	net, 1910				
0.00 0.9983 19.74 .9671		0.9958 -9628		%	đ	%	đ	%	a
37.82 .9384 58.61 .8977	9355	. 9325 . 8901				25			
79.64 .8481 100.00 .7923	8435	. 8391 . 7835	=======================================	$\begin{array}{c} 0 \\ 5.21 \\ 10.10 \\ 18.63 \end{array}$	0.9971 .9877 .9800 .9670	29.86 38.40 50.675 61.722	0.9496 .9351 .9119 .8883	68.386 78.163 87.606 100	0.8733 .8495 .8250 .7891

Atkins and Wallace, 1913	Springer and Roth, 1930
t d t d	3 d
100% 64.14%	25°
0.0 0.81023 0.0 0.90030 12.05 .79914 13.2 .88505 45.30 .76876 24.2 .88241 43.4 .86726	0 1.0029 35.92 0.9386 40.71 .9320 46.19 .9155 100.00 .7921
Mathews and Cook, 1914	Natta and Baccaredda, 1933
t d	% d % d
36%	18°
0 0,9533 25 ,9389 40 ,9296 55 ,9189 70 ,9079	0 0.9986 60 0.8958 10 .9812 70 .8758 20 .9668 80 .8484 30 .9520 90 .8214 40 .9352 100 .7932 50 .9462
Herz, 1918	Ciber 1025
25°	Gibson, 1935
0 0.9969 64.00 0.8805 10.60 .9796 78.05 .8490 30.77 .9481 98.90 .8167 37.21 .9373 100.00 .7880 47.06 .9190	7 d % d 25° 0.000 0.99707 40.342 0.93054 2.314 .99277 50.310 .91108 4.019 .98976 59.769 .89083 5.451 .98733 69.995 .86712
Burrows, 1926 - 1927 ?	8.232 .98271 75.137 .85446 12.169 .97644 83.852 .83172 19.994 .96447 .91.400 .81128 20.290 .96402 .95.335 .80009 100.000 .78656
25°	T
0 0.99707 14.69 .92258 31.801 .94571	Tomonari, 1936
31, 801 .94571 87,531 .82220	% d % d
	100 0.7913 40 0.9346 80 .8469 20 .9671 60 .8944 0 .9982

Uchida	and Kato,	1934			72.00 73.00	.8456 .8437	.8394 .8374	.8336 .3316	
	and may s				74.00 75.00	. 8418 . 8399	.8355 .8336	.8296 .8276	
%	15°	d 20°	30°		76.00 77.00 78.00	.8381 .8362	.8317 .8298	. 8257 . 8237	
0.00	0.9991	0.9982	0.9957	-	79.00	.8344 .8325	.8280 .8262	.8218 $.8198$	
1.00	.9958 .9928 .9899 .9871 .9844	.9950	.9926 .9896		80.00 81.00	.8307 .8289	.8245	. 81 <i>7</i> 9 . 8161	
2.00 3.00	.9928 .9899	.99 2 0 .9890	.9866		ll 82.00	.8271	.8227 .8209	. 8142	
4.00	.9871	.9863	.9837 .9810		83.00 84.00	.8253	.8191 8173	.8123 .8105	
5.00 6.00	.9819	.9863 .9837 .9811	.9793		85.00 86.00	.8235 .8217	.8191 .8173 .8155 .8138	. 80 37	
7,00	.9796 .9773 .9751	.9786 .9763	.9757		86.00	. 8199 . 8181	.8138	.8068 .8050	
8.00 9.00	.97/3	.9740	.9732 .9707		87.00 88.00	.8164	.8120 .8102	.8032	
10.00	.9729	.9718	.9682		89.00 90.00	.3146	.8084	. 8014 . 79 96	
11.00 12.00	.9729 .9708 .9608 .9687	.9673	.9658 .9634		91.00 92.00	.8128 .8111	.8084 .8066 .8049	.7979	
13.00	.9687	.9740 .9718 .9695 .9673 .9651	.9611		92.00	.8093 .8078	. 8031	.7962 .7944	
14.00	.9666 .9645	.9608	.9588 .9565		93.00 94.00	.8059	. 8014 . 7997	.7927	
$\substack{15.00\\16.00}$.9625	.9587	.9542		95.00 96.00	. 8043	.7980 .7964	.7910 .7893	
17,00	.9605 .9585	.9566 .9545	.9519 .9496		ll 97.00	.8026 .8009	7947	.7876	
18.00 19.00	.9625 .9605 .9585 .9564 .9544	.9524 .9503	.9473		98.00 99.00	.7993 .7977 .7961	-	7077	Ĭ
20.00	.9544 9524	.9503 .9481	.9450		100.00	.7977	.7913 .7915	.7858 .7841	
21.00 22.00	.9503	.9481 .9460	.9427 .9404			.,,,,	.,,,,,		
23,00	.9482	.9438 .9416	.9382 .9359		========				
24.00 25.00	.9461 .9441 .9420	.9395	.9339						
26.00	0200	.9373 .9351	.9313		Harms,	1938			
27.00 28.00	.9378	9328	.9290 .9267		mol%	ď	mol%	đ	
29.00	.9357	.9306 .9285	.9244 .9221						
$\frac{30.00}{31.00}$.9378 .9357 .9336 .9314	.9328 .9306 .9285 .9263	,9199			15	S		
32.00	.9293 .9272 .9250 .9229 .9208	.9241 9219	.9176 .9153		0	0.999126	43.716	0.90210	
33.00 34.00	.9250	.9198 .9176 .9154	.91.31		1.135 1.710	.99543 .99310	55.593 64.042	.87739 .86051	1
35.00	.9229	.9176	.9108 .9086		H 3.466	98864	70 000	.83207	
$\frac{36.00}{37.00}$.9186 .9165	.9132 .9110	.9063		5.882 8.388	.98241 97660	89.808 94.788	.81285 $.801128$	
38.00	.9165	.9110	.9041 .9018		12.328	.98241 .97660 .96814	89.808 94.788 96.499 98.236	.80143	
39.00 40.00	.9143 .9121 .9100	.9089 .9067	. 8996		18.681 25.635	.95518 .94067 .92242	98.236	.79859 .79578	
41.00	.9100	.9046 .90 2 4	. 8974 . 8952		25.635 34.175	.92242	100	.79376	
42.00 43.00	.9079	.9003 .8982	.8930						
44.00	.9037	. 8982 . 8961	.8908 .8886						
45.00 46.00	.9017	.8940	.8864		D		66 1040		
47,00	.9100 .9079 .9058 .9037 .9017 .8996 .8975	.8961 .8940 .8919 .8898	.8843		Pesce a	nd Evdokimo	11, 1940		
48.00 49.00	. 8934 . 8933	.8877 .8856	.8822 .8800		%	đ	%	đ	ł
50.00 51.00	. 8933 . 8913 . 8872	.8856 .8835	. 8779 . 8757			25°	,	· · · · · · · · · · · · · · · · · · ·	
51.00 52.00	.8851	. 8814	.8736 .8715	į					
53.00	.8851 .8830	.8794 .8773	. 8715 . 8694		0 21.054	0,99707 .96267 .94554	56.668 70.273	0.89729 .86611	
54.00 55.00	. 8810 . 8789 . 8769	.8753 .8732	.8673		31.796	.94554	70.273 84.212	. 83084	
56.00	. 8769	.8732 .8712	. 8652 . 8632		44.014	.92331	100	.78658	
57.00 58.00	. 8749 . 8729	.8692	.8612						
58.00 59.00	. 8729 . 8709	.8671 .8651	.8592 .8572						
$\substack{60.00 \\ 61.00}$. 8689 . 8670	.8631 .8611	.8552 .8532		1				
62.00 63.00	, 8650	. 8611 . 8591	.8532 .8512						
64.00	.8630 .8611	.8591 .8571	.8492						ļ
65.00 66.00	.8611 .8591 .8571 .8551	.8551 .8531	.8472 .8452						
67.00	.8551	8401	. 8432	Ì	ĺ				
67.00 68.00	8532	.8471 .8451	.8413 .8394						
69.00 70.00 71.00	.8513 .8493	.8432 .8413	.8375 .8355						
71.00	8474	.8413	. 8355						

Griswold	and Buford,	1949		Griffith	s, 1954		-
mo1%	đ	mol% d		%	đ	%	đ
	25°	_			25°		
6.9 11.7 17.4 24.4	0.97867 .96696 .95334 .93830	39.6 0.90651 47.9 .88684 68.0 .84546 83.6 .81465 100.0 .78700		1.23 3.23 6.49 10.26 16.33 18.47	0.99463 .99101 .98562 .97876 .96877 .96604	46.87 50.12 57.09 61.45 65.27 68.43 73.76	0.91827 .91199 .89787 .88706 .87863
Jacobso	on, 1951			22.19 26.28 31.06	.95982 .95318 .94519	73.76 79.74 83.26 90.83	. 85 809 . 84431 . 83596
vo1%	<u></u>	vo1% d		37.26 39.63 42.14	.93443 .93158 .92701	96.72 100.00	.81462 .79646 .78654
0 9.8 19.4 31.5 39.0 48.8	20° 0.9982 .9847 .9718 .9554 .9438 .9271	59.1 0.9064 69.2 .8838 79.0 .8588 89.7 .8277 100.0 .7949		Mc Hutchir	نو مان الله جور کان کان بین الله بین الله الله الله الله الله الله الله الل	ر من میں میں است اسل اسی میں میں اسی اسی اسی اسی اسی اسی اسی اسی اسی اسی	mum of density
							temperature
l	and Campbell			2 1 0.5 0.25 0.12	5		1,90 3,65 3,95 4,00 4,00
mo1%	d	mol% d					
0.000 4.998 13.479 23.820 37.528	25° 0.99707 .98225 .96202 .93912 .90852	51.984 0.8773 58.901 8630 78.902 8238 86.674 8298 100.000 .7868	6 6 8	Gibson, % 0.000 2.314	π 25 39.35 39.13	50.310 52.769	π 44.44 48.55
Carr and	d Ridder, 195 d	l %	đ	4.019 5.451 8.232 12.169 20.290 40.342	39.00 38.96 38.72 38.37 38.24 41.23	59.995 75.137 83.852 91.400 95.335 100.000	54.22 57.65 64.22 71.00 74.91 80.07
10.03 10.24 19.69	0.98010 .97998 .96537	25° 50.35 60.12 64.01	0.91149 .89070 .88160	Jacobson	1051		
19.82 30.16	.96514 .94890	73.93 78.29	.85792 .84694	vol%	π	vo1%	π
30.49 39.33	.94827 .93284	80.62 87,88	.84100 .82156		20		
40.46 50.12	.93 0 81 .91186	90.85 100.00	. 81 330 . 78674	0	45.34	59.1	49.93
10.04 20.03 29.98 39.99 50.12	0.97817 .96219 .94601 .92807 .90830	30° 60.06 70.11 80.02 89.98 100.00	0.88642 .86289 .83783 .81083 .78190	9.8 19.4 31.5 39.0 48.8	43.77 42.47 42.09 43.04 45.52	69.2 79.0 89.7 100.0	56.31 65.20 78.91 98.64
10.04 20.03 29.98 39.99 50.12	0.97411 .95725 .94043 .92130 .90059	60.06 70.11 80.02 89.98 100.00	0.87869 .85465 .82940 .80226 .77289				

	Jones	and Mc	Master	, 1906,	Jones, 1	904	
Viscosity and surface tension	%	0,	,	n 25°	0°	25°	
Pagliani and Batelli, 1884			o.t	ies	2 nd	series	
(Atti Torino)	0 25	1778 3335	5	891 1409	1778 3304	891 1312	
Я 0° п 10°	50 75 100	3642 2576 818	2	1611 1283 565.9	3586 2451 903.	1477 1196 2 608.4	!
0 1775 1309 15.10 2948 2018							
26.23 3621 2485 30.77 3721 2527	Getma	n, 1906					
47.06 3563 2491	t			nn			
64.00 2735 2032 100 734 654		0%		0%	20%	30%	
	10 15	1303	14	617 446 253	1963 1762 1516	2180 1959 1680	
Pagliani and Batelli, 1884	25 30	1002 891 798	1	253 098 98 2	1316 1145	1444 1257	
% (Instituto Tecnico 0° 10° di Torino)	20 25 30 35 40 63	720 654 459	1	875 793 504	1009 902 508	1111 989 586	
0 1775 1309 15.10 2945 2013		40%		50%	60%	70%	
15.10 2945 2013 26.23 3618 2481 30.77 3718 2523	10 15	2340 2058	2	491 073	2140 1949	1980 1689	
37.21 3695 ²⁵⁴⁴	20	1770	1	7 98	1681 1461	1513 1339	
47.06 3560 64.00 2732 2027	20 25 30 35	1502 1329 1157	1.	572 363 198	1269 1154	1184 1058	
100.00 723 640	40 63	1003	1	045 636	997 594	946 568	
Dunstan, 1904	"	80%		90%	100%	- 30	
% n % n	10 15	1476		061	686		
25°	20	1307 1192	,	965 874 805	638 591 553 515		
0 891.0 51.31 1540 6.83 1055 52.82 1490	20 25 30 35	1081 964		726 673	515 483		
10.07 1157 55.35 1475 21.47 1403 58.55 1427	40 63	872 784 526		726 673 620 424	451		
35.92 1600 61.06 1370 37.85 1575 66.53 1282		320		747			
46.19 1570 77.41 1105	t			τ.10	5		
49.56 1532 100.00 556.4	15	0%	10%	20%	30%	40%	50%
	20 25 30	34 26 26 19 16	34 39 31	40 49 40	44 56 47 37 29	76 57	84 55
	30 35	19	23 21	34 27 21	37	53 35 32	45 44 31
Varenne and Godefroy, 1904 (fig.)	40 63	13 11	17 12	21 17	24 17	31 17	30 17
vol% seconds vol% seconds of flow		60%	70%	80%		100%	-/
12°	15 20	38 53	58 35	34 23	19 18	9	
0 259 60 785 10 360 70 735	25 30	33 44 38	35 31	20 23	14 16	9 7 7	
20 515 80 645 30 650 90 510	35 40	33 31 17	25	16 17	11 11	6 6	
40 675 100 420 50 710	63	17	22 16	îí	8	-	

Herz and Anders, 1907 and Herz, 1918	Tower, 1916	
% п % п	% п % п	
25°	15°	
0 895 64.00 1314 10.60 1162 78.05 1060 30.77 1490 98.90 807 37.21 1585 100 560 47.06 1558	100 629.2 95.347 782 99.238 652 91.897 831 98.770 671 88.790 995 97.523 708 84.858 1111	
Dunstan and Thole, 1909 and Dunstan, 1904 and 1905	Tammann and Pillsburg, 1928	
π 20° 25° 30°	% 30.0° 20.0° 10.0° 0.0°	
100.00 585.2 552.5 515.1 79.64 1115 1003 909.8 58.61 1593 1399 1249 37.82 1816 1567 1379 19.74 1587 1378 1198 0.00 1002 891 798	0.0 800 1010 1310 1800 13.9 - 1430 1940 2850 28.4 1310 1760 2440 3630 25.9 1367 1830 2540 3670 37.9 1369 1840 2530 3680 39.8 1374 1840 2530 3660 43.7 1366 1820 2510 3560 49.8 1340 1790 2390 3360 60.3 1230 1590 2100 2850 78.2 950 1190 1490 1880 98.4 540 620 720 860	
Bingham, White and al., 1913		
t n n 10% 21.41% 47.36% 71.61% 100%	Springer and Roth, 1930	
25 898.4 1423 1560 1190 550.0 35 720.6 1090 1200 957.8 476.4 45 599.8 864.2 953.2 785.4 420.2 55 507.9 702.7 774.6 653.4 371.0 65 436.8 585.6	% n (water 0°=1) 25° 0 0.5552 35.92 .9216	
Mathews and Cooke, 1914	40.71 .8929 46.19 .8856 100.00 .390	
t n		
36%	Lemanda 1028	
0 3662 25 1584 40 1040	Lemonde, 1938	
40 1040 55 758.8	% n % п	
55 758.8 70 578.0	15° 0 1130 64 1800	
Jones, 1915	0.6 1160 84 1230 12 1530 92.5 950 22 1870 99.5 640 46 2110 100 633)) }
vol% η		
15° 25° 35°		
0 - 890 - 25 1871 1359 1032 50 2100 1535 1169 75 1594 1235 978 100 - 560 -		

In vapour state	<u>:</u> .			Mor	gan and	l Neidle	e, 1913				
01111 6	1050 / 6			%		<u> </u>	*		J ————		
I	torrow, 1950 (f					30		0 34	024		
15.0 mol%	t η 36.5 mol%	t 52.5	mol%	0.0	11 6	71,030 88.120	39.9 50.0	0 31	.936		
82 12.28 88 12.35 93 12.44 99 12.57 104 12.79 110 12.98	77 11.87 82 11.98 88 12.15 93 12.38 99 12.58 110 13.05	88 93 99 110	12.36 12.46 12.61 13.05	2.5 4.9 9.9 15.0 20.0 25.0 29.9	97 6 94 5 0 4 0 4	64.845 60.294 63.661 88.817 64.894 61.809 69.071	60.0 70.0 75.0 80.0 90.0 100.0	0 27 0 26 3 25 1 23	371 7.209 6.173 6.154 6.100 .037	·	
69.0 mol%	85.0 mo1%	98.0	mol%	t			σ				
82 12.30 93 12.46 99 12.65 110 13.05	77 11.81 82 11.86 88 12.08 93 12.25 104 12.64 110 12.84	66 71 82 93 104 110	11.13 11.32 11.69 12.08 12.43 12.62	0 10 20 30	25% 44.81; 43.80; 42.79; 41.78;	8 34 7 33 6 32	50% .309 .406 .664 .841	75% 28.618 27.804 26.991 26.177	23.		0% 75.49 74.01 72.53 71.03
%	η % 10 0 °	η	100°	===							
	at dew point			Benne	tt, 19	29					
0.0 12.55 15.0 12.48 36.5 12.25 52.5 12.07	12.55	11.46 11.12	12.68 12.49 12.28 12.23	×		g 20		σ			
Carr and Riddi	ck, 1951			0 3.2 6.4 11.5 16.6 25.4	9 9	11.2 99.3 93.0 85.2 78.2	44.3 54.4 65.0 76.1 88.9 100.0	57, 52, 48, 45, 41, 37,	. 8 . 8 . 1 . 3		
% n	%	η	-	34.6	6	32.8					
0.0 893. 9.77 1172. 20.01 1418. 30.01 1581. 34.02 1624. 37.73 1660.	4 59.95 1 6 69.97 1 6 80.03 1 3 89.97	.576.0 .426.4 .233.5 .024.1 .788.5 .556.5		Vale	ntiner	and Ho	hls, 193	38 t	σ	t	
40.00 1671		000.0			01%		vol%		vol%		vol%
Traube, 1885				20 30 40 50	77.7 71.0 69.2 67.6	20	63.9	20 30 40 50	61.0 59.2 57.9 56.2	20 26 36 43 50	59.1 58.3 57.3 56.1 55.0
% σ	<u> </u>	σ		25	vo1%	50	vol%	60 v	o1%	80	vol%
1.96 67.1 3.85 63.7 5.66 60.7 7.41 58.2: 9.09 56.3 10.71 54.8i 12.28 53.06 13.79 51.75	8 23.08 4 5 28.57 4 7 33.33 3 8 37.50 3 9 44.44 3 5 61.54 3	60.46 19.37 4.94 19.33 19.60 7.90 5.57 0.94 2.87		20 30 40	46.4 45.3 44.3 43.2 vol% 25.3 24.4 23.5 22.6	20 30 40 50 100 18 20 22 30 40 50	35.3 34.5 33.7 32.9 vo1% 22.8 22.7 22.5 21.6 20.4 19.5	20 30 40 50	32.9 32.3 31.5 30.8	20 30 40 50	27.3 26.5 25.8 25.0
											

Teitelbaum, Gortalova and Sidorova, 1951	Franke, 1932
mol%	
-10° -5° 0° +5° +10° +15°	<pre>% Diffusion ratio % Diffusion ratio (cm /day) (cm /day)</pre>
0 75.70 74.96 74.27 73.51	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	20° 0.78
0.9 68.78 68.02 67.41 66.64 66.03 65.26 64.42 2.3 64.34 63.50 62.89 66.20 61.59 60.82 60.21 4.7 58.60 57.76 57.22 56.61 55.84 55.15 54.69 10.0 50.63 50.02 49.48 49.01 48.26 47.72 47.18 16.1 43.89 43.51 43.12 42.51 42.13 41.67 41.21 31.0 36.06 35.70 35.28 34.92 34.40 34.01 33.58	Jacobson, 1951
31.0 36.06 35.70 35.28 34.92 34.40 34.01 33.58 51.2 28.92 28.56 28.14 27.71 27.36 26.87 26.37 100.0 22.50 22.09 21.51 21.21 20.67 20.29 19.90	vol % sound velocity vol% sound velocity (m/sec.) (m/sec.)
	20°
Laamanen, 1922	0 1486.5 59.1 1486.5 9.8 1523.3 69.2 1417.5 19.4 1556.6 79.0 1336.4 31.5 1576.9 89.7 1237.4
% a2 % a2	39.0 1569.1 100.0 1129.3 48.8 1539.3
18°	
10 12.32 60 7.59 20 10.20 70 7.09 30 9.49 80 6.74 40 8.50 90 6.32 50 7.92 100 5.68	Optical and electrical properties . Drude, 1897
	% n _D % n _D
Lemonde, 1938	0 1.3335 ^{17°} 56.0 1.3434
% D % D	11.0 3358 65.2 3429
15° 0.6 1.26 64 0.85 12 1.11 84 1.22 22 0.99 92.5 1.46 46 0.77 99.5 1.75	11.0 .3358 65.2 .3424 15.0 .3371 69.8 .3417 19.5 .3386 74.6 .3404 26.0 .3401 78.4 .3394 31.4 .3415 80.1 .3389 35.0 .3422 84.8 .3372 39.7 .3430 89.9 .3350 45.2 .3434 94.6 .3327 46.8 .3435 100.0 .3304 51.1 .3436
Tichacek, Kmak and Drickamer, 1956	
mol% D mol% D	Į
40°	VC.
4.7 +0.17 50.8 -0.54 10.0 +0.62 64.0 -0.93 22.8 -0.44 80.0 -0.46	

Leach	and Lythgoe,	, 1905 %	n <mark>*</mark>		and Wilson	<u> </u>		
	n _D		ⁿ D	%	D D	%	n _D	
0 1 2 3 4 5 6 7 8	20° 14.5 14.8 15.4 16.0 16.6 17.2 17.8 18.4	512 523 534 556 557 58 59 60	39.7 39.6 39.6 39.5 39.4 39.2 39.0 38.6 38.3	0 7,72 15.60 37.70 40.94 41.80	1.33298 .33505 .33727 .34147 .34229 .34227	56.4 65.3 72.9 86.81 94.34 100.00	1,34221 ,34106 ,33908 ,33348 ,33123 ,32887	3 3 3
9 10 11 12 13	19.6 20.2 20.8 21.4 22.0	61 62 63 64	37.9 37.5 37.0 36.5 36.0 35.5	Doroshev	skii and D	vorzhanch		105
14 15	22.6 23.2	65 66	35.0 34.5		15°	17.5°	•	
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45	23.9 24.52 25.8 26.51 27.8 28.4 29.7 30.9 31.6 29.7 30.9 31.6 32.8 33.5 34.7 35.8 36.3 37.7 38.4 39.3 39.3	67 68 70 71 73 74 75 76 77 78 79 81 82 83 84 85 86 87 89 90 91 92 93 95 97	34.0 33.5 33.0 32.3 31.1 30.4 29.7 29.0 28.3 26.8 26.8 26.8 25.1 24.3 6 22.8 21.8 21.8 21.8 21.8 21.8 21.8 21.8	0 2.00 5.00 7.04 10.04 12.00 15.01 24.98 30.02 40.00 45.03 49.98 54.99 60.03 64.99 69.99 75.01 80.00 85.01 90.01 95.00 100.00	1. 33339 .33384 .33453 .33584 .33584 .33644 .33739 .34022 .34128 .34235 .34308 .34327 .34378 .34378 .34365 .34327 .34169 .34067 .33749 .33749 .33749 .33749 .33749 .335745	1, 33320 .33362 .33429 .33480 .33559 .33616 .33702 .33844 .33980 .34091 .34180 .34248 .34294 .34308 .34290 .34250 .34192 .34094 .33980 .33980 .33980 .3450 .3450 .3450 .3325 .33657 .33450 .33212 .32857	0 9 9 9; 10 11 12 14 16 19 22 24 26 28 29 31 32 34 35 36 37 38 39 40	8 6
46 47 48	39.6 39.7	98 99	5.1 3.5	Glazunov,	1014			
49 50	39.8 39.8	100	2.0	mol %	n _D		mol %	n _D
Chenev %	20°	n _D	refractometer.	0 13.50 25.37 38.12 40.00 50.39	1.33232 .33823 .34090 .34163 .34163		54.68 69.77 77.95 87.37 100.00	1.33984 .33669 .33505 .33193 .32773
23.36 100.00		.3400						_

Field, Fa	airn and M	acoun, 193				ari, 1936			
đ			ⁿ 5893		%	n _D	%	n _D	
0.9370 .9371 .9372 .9376 .9376 .9379		15.56° 1.34316 .34306 .34305 .34303 .34308 .34308	18° 1.34252 .34258 .34245 .34256 .34248 .34257 .34244	19° 1.34229 .34233 .34223 .34231 .34225 .34230 .34220	100 80 60	20° 1.32911 .33813 .34235	40 20 0	1.34234 .33817 .33299	
.9383 .9385		.34302 .34301	.34243 .34252	.34219 .34228	Pesce an	d Evdokimo	ff, 1940		
.9387		.34293 20°	.34241 21°	.34218 22°	76	n _{He}	K	ⁿ He	
0.9370 .9371 .9372 .9376 .9378 .9379 .9381 .9383		1.34206 .34207 .34200 .34206 .34201 .34204 .34197 .34199 .34204	1,34181 .34182 .34178 .34179 .34177 .34176 .34172 .34177	1.34157 .34156 .34157 .34155 .34155 .34152 .34148 .34153 .34155	0 21.054 31.796 44.014	25° 1.33255 .33758 .33986 .34103	56.668 70.273 84.212 100	1,34071 .33853 .33417 .32643	
.9387		.34194	.34172	.34149	Griswold	and Bufo	rd, 1949		
	_				mo1%	n _D	mo1%	n _D	
Franke,		 %			6.9	1.33512	39.6	1,34105	
		0°	n _D		6.9 11.7 17.4 24.4	.33700 .33881 .34029	47.9 68.0 83.6 100.0	.34009 .33609 .33163 .32657	
0 25 32	1.3333 .3385 .3412	50 75 100	1.3420 .3395 .3292						
					Thwing,	1894			
J ["] necke	e, 1933				7,	ε	%	ε	
×	n _D	%	n _D		0	15° 75.50	50	57.14	
10 20 30 40 50	1.3357 .3385 .3410 .3427 .3431	.56° 60 70 80 90 100	1.3427 .3412 .3385 .3344 .3299		5 10 15 20 25 30.8 35 37 40 45 47.5	73.24 72.30 70.73 69.20 67.94 67.94 64.14 61.50 60.22 59.41 60.22	55 60 65 70 75 78 80 85 90 95 99.7	52.51 50.00 46.76 45.16 44.11 44.62 40.98 38.05 36.30 34.05 34.05	
Natta ai	nd Baccare	dda, 1933							
%	n _D	A	ⁿ D		Harring	ton, 1916			
		8°			Harring %	ε	%	ε	
0 10 20 30 40 50	1.33307 .33538 .33844 .34092 .34258 .34326	60 70 80 90 100	1.34268 .34121 .33840 .33450 .32941		0.0 17.4 33.1 48.0	78.73 71.11 64.17 57.44		45.31 40.96 33.78	
					<u> </u>				

Drude, 1897	Martin and Brown, 1938
% ε % ε	mο1% ε mο1% ε
17° 0 81.7 56.0 55.1 5.7 79.1 60.5 52.0 11.0 76.4 65.2 50.1 15.0 74.5 69.8 47.6 19.5 72.3 74.6 46.0 26.0 69.4 78.4 44.0 31.4 66.6 80.1 42.8 35.0 65.0 84.8 40.6 39.7 62.5 89.9 38.2 45.2 60.3 94.6 36.1 46.8 59.1 100.0 33.2	25° 39.9° 81.37 36.8 90 31.33 65.79 41.6 80 33.75 39.79 53.1 70 36.57 20.20 63.9 60 40.00 11.50 69.9 50 44.13 7.90 72.5 40 48.80 6.20 73.8 30 53.70 2.00 77.0 20 59.35 0.00 78.5 10 65.95 5 69.53 0 73.15
Salazar, 1924	Jones and Davies, 1939
% ε % ε	β ε ε ε 1 2
25° 0.000 81.12 60.041 51.23 4.999 78.53 64.966 48.79 10.014 76.63 70.000 45.78 15.016 73.81 70.020 45.93 20.011 72.14 74.906 44.56 25.018 69.49 75.045 44.06 33.018 68.05 79.734 42.01 33.893 66.53 80.013 41.45 40.037 63.30 84.512 39.94 44.967 60.58 84.991 39.29 45.149 60.11 89.907 39.10 49.986 56.85 93.489 36.63 50.061 56.85 93.489 36.63 50.061 57.29 99.166 33.55	20.14° 24.89° 0 80.290 80.320 78.480 78.500 4.95 78.146 78.215 76.313 76.401 9.99 76.009 76.142 74.230 74.329 19.87 71.783 71.880 69.994 70.091 29.96 67.300 67.332 65.581 65.618 39.86 62.681 62.721 61.025 61.071 49.96 57.861 57.856 56.283 56.287 59.83 53.247 53.270 51.760 51.815 69.82 48.584 48.586 47.200 47.211 79.61 44.049 44.056 42.745 42.760 90.71 38.649 38.677 37.493 37.520 94.89 36.484 36.492 35.404 35.419 100.00 33.580(20°) 32.610(25°) (two series) (at 20°) (at 25°)
Åkerlöf, 1932 «ε	Thevenet, 1910
20° 30° 40° 50° 6 0 80.37 76.73 73.12 69.85 66 10 75.84 72.37 68.90 65.66 62 20 71.02 67.48 64.13 61.06 58 30 66.01 62.71 59.53 56.59 53 40 61.24 58.06 54.82 52.17 49 50 56.53 53.47 50.40 47.82 45 60 51.53 48.58 45.64 43.22 41 70 46.46 43.63 41.04 38.81 36 80 41.46 38.98 36.66 34.62 32 90 36.80 34.62 32.56 30.67 28	60°

Radchenko a	and	Shestakovskii,	1955	(fig.)
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Dispersion by X-rays

sin a/l	I		sin a/l	I	
		13°			
	0%			20%	
0.10 .18 .20 .22 .30 .36 .50 .60	8 108 80 79 28 30 18 20		0.10 .14 .20 .23 .30 .36 .55 .63	3: 9: 65 63 30 31 21 23	3 3 0 1
3	80%			50%	
0.08 .10 .14 .19 .21 .30 .37 .48	30 46 114 74 75 40 40 30 29		0.03 .10 .14 .20 .22 .29 .33 .40 .50 .60	35 50 112 62 60 34 35 30 26 28 23	
		100%			
0.08 .10 .13 .20 .25	62 76 93 46 40		0.30 .40 .50 .60 .75	39 28 23 22 17	

a = angle of dispersion. I = relative intensity of dispersion. 1 =wave length

Heat constants.

Lecher, 1877

%	U	%	U
	at r	oom t.	
0 12.32 20.42 25.60 27.90	1.000 .073 .073 .019 0.957	36.62 42.64 51.64 63.43 91.14	0.918 .879 .826 .781
30.51	0.980	100.00	.622

Zetterman.	1	881
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%	U	%	U	
	0°			
0 10 20	$1 \\ 1.018 \\ 0.989$	30 40 50	0.966 0.902 0.841	

Bose, 1907

%		U	
	0.1 - 5.10	21.4 - 20.3°	38.3 - 42.00
0 5	1.006	0.999	0,999
	.023	.998	.997
10	.019	.996	.993
15	0.999	.992	.937
20	.973	.988	. 980
2 5	.947	.981	.971
30	.921	.972	.958
35	. 894	.958	. 940
40	. 869	.928	.919
45	. 844	.892	. 898
50	.818	.861	. 874
55	.7 93	. 834	. 848
60	.768	. 807	. 824
65	.744	.77 9	. 800
70	.720	.7 50	.777
7 5	. 696	.725	.751
80	.673	. 699	.723
85	.64 9	.676	. 628
90	.625	.653	.672
95	.600	.631	.644
100	.570	.607	.612

Doroshevskii, 1910

%	U	%	U	
	18	- 100°		
0.00 5.00 10.01 15.01 20.00 24.98 30.02	1.0060 .0085 .0114 .0065 .0021 .0001	40.00 49.98 60.03 69.99 80.00 90.01 100.00	0.9542 .9162 .8689 .8287 .7744 .7200 .6581	

WATER + METHYL ALCOHOL

				cal/ g mixture					
Bo:	se, 1907	Q mix		 8.56 16.49 23.88 30.77	5.33 8.57 10.26	4.42 7.36 9.12 10.03	5 6	.20 .38 .68 .34	
	0°	19.69°	42.37°	 37.21 43.26	10.96 12.73 10.65	9.89	8 7	.69 .31	
0 5 10	0.0 100.0	0.0 81.6 143.5	0.0 60.0 104.1	23.88 30.77 37.21 43.26 48.91 54.23 59.25 63.99 68.48	10.18 9.65 9.05 8.26 7.70 7.03 6.31 5.56 4.80 3.97 3.11 2.18	9.50 9.01 8.43 7.79 7.16 6.51 5.84 5.17	6 6 5 5	.98 .60 .15 .66 .19	
15 20 25 30	168.0 205.8 229.1 237.3 237.3 233.1	182.3 209.3 218.7 219.8 216.8	133.8 152.5 160.6 162.9	53.23 63.99 68.48 72.72 76.75 80.58 84.21 87.67	7.03 6.31 5.56 4.80	4 4 X	4 3 3	.68 .18 .61	
40 45 50 55	227.5 219.6 209.3	212.1 204.3 194.5 184.5 171.8	160.2 155.7 149.6 141.7 133.5	90.97 94.12 97.12	3.97 3.11 2.18 1.14	3.72 2.86 1.95 0.994	1 1	.33 .65 .04 .484	
0 10 15 20 20 30 35 45 50 65 70 85 85 90 95	185.3 170.6 154.7 136.9 116.3	171.8 158.4 143.9 128.1 109.0	124.0 113.4 100.2 85.3 68.7 50.0	Young	and Fortey	, 1902			
85 90 95	93.4 66.8 36.0	86.5 60.0 31.0	50.0 32.2 14.4	mo1%	ini	t itial	final		
		cal/mole alo	oho1	60	2	21.7	29.5	55	
5 10 15 20 25	38 74 110 145 182 221 264 310 361 422 427 569 665 790 948 1138 1374	32 65 100 136 171 206 243 286	17 36 60 85	Raikow	, 1902				
25 30 35	221 264	206 243	85 113 142 173 207	vo1%	flashing	point	vol%	flashing point	
40 45 50	310 361 422	286 334 390	207 242 285			720	mm		
50 55 60	487 569	334 390 453 530 619	333 390	7.5	65.1 58.1 44.1	25 75	50 70	22.75 20.28 16.75	
65 70 75 80	790 948	730 876 1041	456 541 643 761	20 30 40	36 30	25	80 90 100	16.75 13.25 9.50	
85 90	1138 1374 1650	1222 1431	761 890 1040	50	2 6				
95 100	1650 1990 2060	1634 1714	119 4 1297						
5		al/mole wate 87	r 63						
10 15 20 25 30	105 185 243 285 315 338	87 159 216 261 292 314	116 158 191 215 232						
35 40 45 50	359 380 400	335 355 373 390	246 260 272						
50 55 60	419 440 464	390 409 430	283 296 309						
65 70 75 80	489 516	452 480	324 335						
80 85 90	547 581 621	511 544 572	342 339 330						
95 100	666 715 767	598 622 641	31 8 303 285						
<u></u>									

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WATER + ETHYL ALCOHOL

Water + E	thyl alcohol (C2	H ₆ 0)									
Heterogene	ous equilibria .			Rayl	eigh,	1902					
					%			%			
				L		<u>v</u>	L		V		
Equilibriu	m L + V .					at b	.t.				
				1.97	0 1	7.50	66.06		.76		
Dittmar an	d Stewart, 1873_6			3.98 6.01	0 3	31.59 39.79	77.39 82.21	86	.14		
%	b.t.			9.88 25.86		51.45 58.03	85.94 92,41		3.49 2.84		
1	v	L		45.62		74.12	95.55		.45		
100	77.7			L							
99.87 99.00	78.59 78.53	_		İ							
98.20	78.49	=		Kablu	kov.	So lomor	nov and	Gabin.	1904		
98.00 95.86	78.47 78.45	78,94 78,94 -	-78.95	l	,						
96.86 95.77 95.19	78.45 78.40	78.88 -	78.92	%		p	L	%	v		
94.59	78.45		.78.82 .78.95								·
93.44 92.35	78.52 78.49	78,92				47	7.5°				
91.07	78.55 78.60		79.10	10.06 17.66		$112.2 \\ 130.7$	10.0 20.4		50.80 52.25		
89.88 88.61	7 8.65	78.75 -	78.78	23.35		140.0	29.5 41.4	ŏ	71.58		
88.00 83.79	78.66 78.91	_		30.10 46.00		$152.8 \\ 168.1$	41.4 49.6	0 5	74.90 76.90		
79.98 73.96	79.22 79.70	_		II							
69.17	80.07	_									
64.27 64.27	80.40 80.26	82.34	-82.74	ļ							
59,95	80.66 80.69	81.79 81.34		Sore	1, 19	00					
59.95 54.96	80.79	82.19	-82,24	%	<u> </u>						
50.26 44.97	81.14 81.59 - 81.69	82.74 82.74									
39.97 35.00	81.59 - 81.69 81.84 - 81.89 82.44	82.74 83.34 83.39		1	30°	35°	40°	45°	50°	55°	60°
21.5 15.35	84.25 - 84.30	86.95		0.00 5.55	31 39	42 51	55 68	71.5 90	92 117.5	117.5 153	114.9 195.5
15.35 12.63	86.00 88.81	89.46 91.91 -	- 92.10	11.23	46 53	60 70	80 92	106	138	183	234
6.93	91.51 -92.31	91.91 95.21	95.31	18.19 26.47	60	77	101	120 131	157 1 7 2	202 218	254 274
				32.84 36.77	64 66	84 86	109 112	142 146	184 186	233 253	292 321
				46.86	71 75	91 95	116 121	148 158	198	260	335
				51.35 54.45	75.5	99	131	170	219 219.2	276 278	343 344
Sorel, 190	00			67.86 83.89	76.5 77	100.5 101	132.5 133 133.5	175.5 172	219.5 219.5	280 281.5	34 7 349
%		Я		100,00	78	102	133.5	173	220	282	350
L	V L		v	1	65°	70°	7 5°	80°	85°	90°	95°
70	60mm 825mm	760mm	825mm	0.00	187	233	289	354	433	525	634
2 1	8.08 - 50	70.69	77.7	5.55 11.23	245 289	302 354	368 432 473	452 5 2 5	552 627	662 742	780 885
5 3	3.38 - 55	72.60	-	18.19 26.47	312 328	384 418	473 514	573 623	693 7 52	836 900	-
15 5	8.79 62 60 7.54 - 65	77.04	80.7	32.84 36.77	361 391	446	550	658	786	-	-
20 60 25 6	6.18 68.4 70 1.72 - 75	79.40 82.07	83.8	46.86	394	4 7 6 481	576 593	680 712	793 840	-	-
30 6	3.46 71.5 80	84.79	87.4	51.35 54.45	412 419	495 502	598 618	725 745	850 890	-	-
35 65 40 66	5.15 - 85 6.97 74.6 90	87.68 90.97	91.6	54.45 67.86 83.89	429 438	522 539	627 650	745 752 798	909 9 2 9	-	-
45 6	3.97 74.6 90 8.79 - 95 100	90.97 94.16 100.00	100,0	100.00	441	5 2 5	652.5	812	960	-	-
		100.00									
A											
				ļ							
I				B .							

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Masing, 1908	% V		97.41 97.14 97.07 96.93 96.10	97.45 97.21 97.10 97.03 96.23	131,3 130,9 130,3 130,3 131,6	123.1 121.9 121.1 120.8 119.6	9.0
L 760mm	v 400mm 220m	m 40mm			54.81°		,
33.36 71.85 52.14 75.91 73.50 83.00 85.66 88.00 88.26 89.81 90.98 91.68 93.83 94.04 96.82 96.73	72.56 73 76.38 76 88.26 88 91.89 92	37 78.18 84.13 53 87.06	100.00 96.47 89.88 80.44 80.00 70.13 68.29 60.00 55.96 48.23	100.00 96.47 86.80 86.23 82.94 80.33	275.2 275.9 273.2 265.7 264.6 255.5 247.5 243.6 237.3	275.2 252.3 	0 23.6 -4.4 76.7 88.4 - - 97.6
Vrevskii, 1910			50.00 55.96 48.23 44.33 40.75 33.82 25.06 21.30 20.50	78.12 77.40 72.16	233.9 228.1 220.7 204.2	130.6 130.6 102.8	97.5 101.4
% L V	p	p p 1	21.30 20.50 0	69.83	116.6	91.7	101.2 116.6
100.00 100.00	39.76° 129.8° 129	ο -	100	100	cond serie	275,2	
98.20 98.20 97.52 97.55 90.04 91.7 80.00 86.73 79.92 86.73		.5 5.9 .6 7.9 .0 24.2 	99.71 99.13 98.70 97.75 97.51 97.14	100 99.71 99.13 98.71 97.72 97.45 97.10	275.2 276.3 275.9 276.7 277.0 276.3 274.6	274.3 269.8 267.7 261.4 258.9 255.1	0 2.0 6.1 9.0 15.6 17.4 19.5
43.45 43.45 42.62 42.00 40.85	100.0	.81 44.8	97.00 96.90 96.70 96.47 96.35 96.20	97.03 96.80 96.66 96.47 96.37 96.27	276.3 275.7 275.3 275.9 276.6 275.4	256.2 253.0 252.3 252.3 250.6	20.1 - 22.3 23.6 24.3 24.8
39.10 - 37.95 - 36.79 - 36.42 77.30	105.5 105.1 104.9 104.4 59	 .7 44.7	100. 0 0 99.00 95.68	100.00 - 95.68	653.3 653.2 654.3 655.5	653.0 586.6	- 67.7
35.00 - 32.90 - 31.88 75.83 30.25 75.22 26.78 - 25.36 - 22.00 71.22 18.25 69.00 15.92 68.12	103.7 101.9 101.2 55 99.4 53 95.9 95.5 90.5 44 84.7 40	.80 45.4 .98 45.5	90.88 82.46 74.58 71.17 59.48 48.19 47.68 41.80	91.96 87.30 84.08 82.80 79.68 	651.0 640.5 623.4 615.9 590.9 566.3 566.6 549.0	532.1 466.9 420.1 402.3 357.7 - 326.8	118.9 173.6 203.3 213.6 233.2 239.8
100.00 100.00 99.40 99.30 99.13 99.09 98.80 98.77 98.47 98.37 98.20 98.20 97.52 97.55 97.41 97.45 97.14 97.21 97.07 97.10 96.93 97.03 96.37 96.53 96.10 96.23 90.04 91.74	129.8 129.8 130.0 127.131.1 128.131.1 127.130.3 125.6 131.5 123.130.9 121.5 130.3 120.6 130.9 121.9 130.9 121.9 130.9 121.9 130.9 121.9 130.9 129.2 105.6	2.3 3.0 4.1 5.3 5.9 7.9 8.2 9.2 9.5 11.0	38.90 38.14 37.79 36.10 32.47 31.77 30.25 29.75 27.94 25.36 23.92 20.08 20.00 0.00	75.95 - 74.00 73.42 72.54 - 70.22 68.21	541.4 540.9 539.5 535.1 523.9 519.7 515.2 513.7 508.5 495.5 489.8 469.2 468.8 286.9	298.3 	241.2 245.9 246.9 250.0 - 255.1 - 286.9

74.79° (second series) 100.00 100.00 653.0 653.0 - 99.43 99.40 653.0 643.1 9.9 99.33 - 652.8 99.00 - 653.2 98.80 93.64 652.3 630.1 22.2 98.48 98.32 97.93 97.65 654.0 616.1 37.9 95.92 95.82 654.0 588.4 65.6 95.46 95.50 655.7 585.7 70.0 94.57 94.64 652.3 570.3 82.5 90.88 91.96 651.0 532.1 118.9 97.31 97.20 653.3 608.5 44.82 26.83 96.73 653.1 601.1 51.99	81.8
96.83 96.73 653.1 601.1 51.99 96.63 96.57 655.0 600.5 54.50 95.82 95.79 656.6 590.3 66.31 95.68 95.68 654.3 586.6 67.72 95.50 95.53 655.7 585.7 70.03	Carroll, Rollefson and Mathews, 1925
Evans, 1916 b.t. % b.t. % L V L V 760 mm	at b.t. 0 0 60 79 10 54 70 80.5 20 68 80 84.5 30 75 90 90 40 77 100 100 50 78
78.2 91.1 91.8 82.9 33.6 78.3 78.4 84.6 89.6 83.6 29.0 76.2 78.7 81.5 88.0 84.0 27.2 75.8 79.2 75.8 85.8 84.9 23.0 73.7 79.5 72.9 84.6 85.7 21.3 79.9 67.5 84.2 86.9 17.3 70.0 83.8 86.1 19.9 72.5 79.9 67.5 84.2 86.9 17.3 70.0 83.8 86.1 19.9 72.5 80.2 64.8 83.5 87.5 15.1 80.4 62.0 82.7 88.4 12.8 66.7 80.5 59.2 81.9 39.5 11.6 62.5 80.6 57.3 81.5 90.3 10.1 60.0 81.7 51.2 81.2 92.4 7.1 51.4 81.7 51.2 81.2 92.4 7.1 51.4 81.8 45.7 - 94.5 4.1 43.7 82.0 43.1 79.6 95.7 3.3 33.5 57. 46.8 81.8 45.7 - 94.5 4.1 43.7 82.0 43.1 79.6 95.7 3.3 33.5 79.2 98.1 1.0 16.7 99.9 (second series)	Dobson, 1925 F
b.t.	

WATER + ETHYL ALCOHOL

Grumbt	, 1930					Dornte,	19 2 9				
b.t.	·	78	b.t.	Я		Z	p	Pa	P ₁		
	L	v		L		[- -		25°			
132.7 132.4 127.2 127.3 125.2 124.5 122.9 121.4 121.1 119.4 116.8 115.9 114.9	3 atm. 0.2 0.3 4.4 4.4 6.4 7.4 10.0 11.8 12.4 15.7 24.2 27.6 28.6 33.2	1.9 3.0 39.0 46.6 51.0 56.2 60.0 59.4 62.5 18.3 72.2 68.1 72.8	148.5 148.1 146.4 146.5 144.1 143.1 140.5 134.6 134.1 133.5 132.2 131.9 130.9	5 atm. 2.1 2.3 3.8 4.3 5.6 10.0 10.5 22.7 25.6 27.3 30.1 32.0 35.5 38.0	22.0 25.0 34.8 42.4 49.3 56.5 55.8 67.0 70.7 67.1 70.8 71.0 70.9	0 5.30 13.74 25.32 34.38 46.21 54.85 65.53 75.25 84.79 92.30 94.96 100.00	23.7 27.9 34.2 41.2 45.6 48.7 50.6 52.5 54.4 56.1 58.8	0 10.3 19.6 27.7 32.2 35.4 37.7 40.5 43.3 46.1 50.7 52.4 58.8	23.7 17.6 14.6 13.5 13.4 13.3 12.9 12.0 11.1 10.0 7.7 5.4 0.0		
114.1 113.2	37.1 38.5 44.9 49.0 55.0	72.8 71.8 71.2 72.6 73.0	130.2 129.2 128.1	42.3 48.0 52.8	72.0 74.3 74.8	L %	v	p	P2	P1	
112.8 112.3 111.0	49.0 55.0	74.3 77.2	125.6 125.5	73.4 75.8	86.3 87.0			25°			
109.0 109.0	74.0 76.7	86.5 84.0		75.6 15 atm	07.0	26.37 33.29 42.58 54.70 56.54 66.49 77.87	69.66 74.30 76.62 78.03 78.55 80.64 80.56 84.80 93.50	41.8 45.2 47.9 50.7 51.0 52.7 52.8 54.8 58.4	19.8 24.0 26.9 29.6 30.1 32.7 32.7 37.6	22.0 21.2 21.0 21.1 20.9 20.0 20.1 17.2	
184.4 181.0	2.0 4.7 6.0	20.3 36.3	193.7 193.1 189.3 188.9	3.1 3.4 7.1	23.5 26.0	77.87 92.55	93.50	58.4	49.6	8.8	
180.0 177.0 176.0 174.9 170.5 170.4 169.5 169.2 167.3	9.5 10.8 12.9 22.0 23.3 25.1 30.0 39.0 40.5 49.8	36.0 47.8 51.1 52.2 62.0 62.6 62.5 64.4	187.0 185.8 180.9 181.5	7.1 7.6 9.6 11.3 19.6 20.0 20.5 20.9 21.4	38.0 40.8 47.4 49.3 61.6 59.3 60.5 60.0 61.1	Kleiner	t, 1933	v			
165.3 165.0	39.0 40.5	70.7 70.5	175.5 174.8	37.4 40.0	69.6		120°	140°	160°	180°	
165.0 163.1 161.9 161.0 159.0 158.6 158.2 158.0 157.3 157.0	49.8 56.7 73.8 83.0 85.0 85.3 88.0 96.4 97.8 99.8	62.6 62.5 64.5 66.0 70.5 72.7 75.7 84.8 86.6 87.9 89.5 99.7	180.9 181.0 180.8 175.5 174.8 171.8 171.3 168.5 167.5 167.5 166.7 166.4 166.5	54.0 59.4 73.2 83.8 84.7 96.1 99.5	73.0 74.6 84.2 86.5 87.6 89.2 96.2 99.5	5 10 15 20 25 30 35 40 45 50 65 70 75 80 80 80 95 100	38.0 50.0 57.5 62.5 63.5 63.5 71.0 73.5 74.5 77.5 77.5 79.0 81.0 83.5 88.0 91.0 95.0	36.0 48.0 55.0 60.0 63.5 66.0 70.0 71.5 73.5 75.0 76.5 78.5 90.0 83.0 90.5 95.0	32.5 45.0 52.5 58.0 61.5 64.5 70.0 75.5 74.0 82.0 82.0 87.5 90.0 100.0	30.0 42.0 50.0 55.0 62.0 65.0 66.5 69.0 70.5 74.5 74.5 81.0 84.0 86.5 90.0 95.0	
										, , , , , , , , , , , , , , , , , , , 	

Cornell and Montonna, 1933	Baker, Hubbard and al., 1939
wt% mol% wt% mol%	mo1% mo1%
L V	L V L V
20° 0.6 0.3 6.2 2.5 1.1 .5 10.9 4.6 2.0 .8 20.0 8.9 2.1 .9 19.9 8.8 3.0 1.2 26.2 12.2 3.44 1.4 29.0 13.8 4.9 2.0 37.4 19.0 6.15 2.5 42.3 22.3 6.8 2.8 44.8 24.1 8.5 3.5 49.3 27.5 10.14 4.2 53.1 30.7 13.6 5.8 58.9 35.9 15.14 6.5 61.1 38.0	760 mm 75.0 78.6 33.7 58.9 72.2 76.6 31.2 59.1 68.1 74.2 28.6 57.3 65.2 72.0 26.8 56.2 61.7 70.7 24.5 55.5 57.5 68.9 20.8 52.7 49.7 65.2 19.8 53.1 46.1 64.3 16.6 51.6 42.1 62.4 15.6 50.6 38.9 61.3 11.0 45.6 36.3 60.2 8.8 42.0
17.14 7.5 03.0 40.0 19.04 8.4 64.7 41.7	Langdon and Keyes, 1942 mol# mol#
25.35 11.7 69.1 46.6 26.85 12.6 69.7 47.3	L V L V
19.40 8.6 66.3 43.5 20.90 9.4 66.3 43.5 22.70 10.3 67.8 45.1 25.35 11.7 69.1 46.6 26.85 12.6 69.7 47.3 29.90 13.3 71.3 49.3 32.05 16.1 72.3 50.5 33.30 16.3 72.9 51.2 36.6 18.4 73.7 52.3 38.0 19.4 74.0 52.7 41.24 22.5 75.9 55.2 45.1 24.3 75.9 55.2 45.1 24.3 75.9 55.2 48.9 27.2 76.8 56.4 53.0 30.5 78.7	at b.t. 0.70 6.82 43.90 62.13 1.00 9.82 49.90 64.74 10.50 45.14 57.70 68.16 19.70 52.23 68.45 73.87 31.65 57.53 18.40 82.66
57.0 34.1 70.7 59.0 61.3 38.3 79.9 60.8 65.6 42.7 81.7 63.6 68.6 46.0 82.6 65.0 70.9 48.8 83.9 67.1 74.8 53.7 85.0 69.0	Beebe, Coulter and al., 1942 b.t. mol% b.t. mol%
83.9 67.2 88.8 75.6	L V L V
81.5 63.3 86.5 71.5 83.9 67.2 87.7 73.5 86.0 70.6 91.3 80.3 88.0 74.1 93.3 84.4 90.1 78.0 94.31 86.6 92.8 83.4 96.16 90.7 94.20 86.4 97.88 94.8 96.28 81.0 98.07 95.2	760 mm 190 mm 85.3 20.10 52.85 62.0 1.60 14.60 79.0 64.90 71.95 55.3 9.00 41.25 78.5 90.75 90.40 53.0 20.90 54.55 94.50 94.00 50.1 35.35 60.45 48.9 49.70 65.40 50.5 58.05 69.25 78.1 1.60 14.70 49.8 70.00 75.50
Wiley and Harder,1935	69.3 8.55 43.00 49.8 89.70 89.90 67.5 20.60 54.15 48.6 98.12 97.88 65.3 34.95 59.45
mol% mol% L V L V	64.7 46.75 64.10 64.4 58.00 68.90 95 mm
25° 2.5 25.0 37.7 59.5 4.8 35.7 39.3 59.0 6.0 40.0 49.3 64.0 11.0 46.0 65.3 73.5 22.7 53.5 66.5 72.8 27.0 55.0 81.8 82.5 33.4 57.0	64.4 58.00 68.90 95 mm 63.8 70.00 74.95 62.7 84.20 84.88 50.6 0.35 2.05 63.6 89.67 89.73 41.7 9.35 41.10 63.0 97.27 96.92 40.0 21.25 54.55 37.5 36.15 60.60 36.2 49.85 65.55 36.5 64.60 72.90 - 70.10 76.10 36.2 83.70 85.20 37.0 89.73 90.12 35.4 98.25 98.35

t	P Kg		mol%				Schoenbor				
		L		<u>v</u>		mo1%	v	b.t.	m c L	01% V	b.t.
150	7.50 8.33 9.11 10.16 10.31	7.3 13.8 26.5 51.4 63.9	41 48 61	3.4 3.7 3.6	!	0 1.8 5.4 12.4 17.6 23.0	0 17.9 33.75 47.0 54.1	100 95.50 90.60 85.40 83.70	38.5 44.0 51.4 67.3 84.0	61.2 63.3 65.7 73.5 85.0	81.0 80.5 79.8 78.9 78.26 78.32
200	21.1 23.2 26.0 29.2 29.8	5.8 11.4 23.7 49.7 63.3	33 43 58	1.7 3.8 3.3 3.5 3.1		23.0 28.8	54.1 54.2 57.0	82.00	100.0	100.0	78.32
250	50.4 53.8 61.1 68.7 71.0	6.3 11.1 23.5 50.7	19 26 37	7.2 5.8 7.3		50.50 50.52	133 15 7	L 4.6	2	v 9.0	
275	71.0 82.7 94.3 104.9	68.8 12.6 26.0 40.0	69 24 34	1.5 1.4 2.5		50.25 50.75 50.51 50.50 50.20 50.20	164 177 200 196 207 220 225	9.3 12.25 15.8 33.3 34.25 51.3 82.4 90.8	4 5 5 5 6 8	2.4 8.2 0.7 9.0 8.6 4.9	
wt%	mo1%	cr.t.	wt%	mol%	cr.t.	50,50 60,60	225 219	5	9 1	1.0	
18.7 24.0 26.9 35.8 40.0 45.1 49.6 55.1 61.0	8.3 11.0 12.6 17.9 20.6 24.4 27.8 32.4 38.0	344.9 339.8 334.8 325.7 317.6 311.6 307.5 296.5 288.4	64.4 69.2 74.1 79.0 84.0 88.7 94.0 100.0	41.5 46.8 52.8 59.4 67.3 75.5 86.1 100.0	284.4 277.3 270.3 264.2 259.2 253.1 248.0 243.0	60,65 60,70 60,65 60,65 60,65 60,65 60,65 60,65 60,65	249 298 325 342 343 363 363 364 366	8 19 37 50 52 54 80 85 86 97	.5 .8 .1	31.6 39.3 51.7 59.6 64.8 66.0 67.1 82.6 86.2 86.7 97.2	
·											
wt%		r,P Kg	wt%		cr.P Kg						
16.3 30.9 46.0	7.1 14.9 25.0	198.9 171.6 144.8	63.9 80.0 86.5	40.9 61.0 71.5	113.8 85.8	 	and Thom				
40.0	20.0	144.0	100.0	100.0	77.3 65.1	b.t.	mo L	1% V	b.t.	mo L	1% V
7						100 99.3 96.9 96.0 95.6 94.8 93.8 93.8 92.9 90.5 89.4 88.4 88.4 88.4 88.4 88.4 88.4 88.4	0 0.28 1.18 1.37 1.44 1.76 3.02 2.46 3.02 5.19 5.19 5.25 6.73 7.15 12.60 14.30 17.20	0 3.2 11.3 15.7 13.5 si 15.6 21.2 23.1 24.8 31.8 31.4 33.9 37.0 36.2 40.6 46.8 48.7 50.5	83.4 83.0 82.3 82.0 c 81.4 81.5 81.5 80.9 80.5 80.2 80.0 79.5 78.8 78.3 78.3	20.6 21.0 25.5 28.4 32.1 34.5 40.5 44.9 50.6 56.3 73.5 80.4 91.7	53.0 52.7 55.27 56.7 58.6 58.6 59.1 62.6 63.3 66.1 67.3 73.3 77.6 90.6 100.0

					Nove	lla and	Tarraso,	1952		
Othmer b.t.	, Moeller L	and al., 1	951 V		L	101% V	b	.t.	Р,	p ₂
	wt%	mo1%	wt%	mo1%				70.2	755	220.7
127.6 125.9 120.6 114.0 112.0 112.5 110.0 107.3 107.3 107.3 107.3	1.9 2.5 11.8 26.0 31.0 39.4 54.2 75.3 78.0 78.3 85.9 87.3 91.1	1.84 0.7 1.2 5.0 12.1 14.9 20.3 31.6 54.4 58.6 70.5 72.9 81.7	20.5 23.7 55.4 68.0 70.0 71.8 78.1 83.4 84.4 84.2 89.0 90.0	9.2 11.0 32.7 45.4 47.8 50.0 58.2 66.3 68.0 67.6 76.1 77.9 83.9	84.9 82.6 65.0 54.8 49.6 31.6 27.4 23.5 20.1 20.0 12.1 4.5	85; 83; 72; 66; 64; 61; 60; 55; 52; 53; 45; 30; 24;	.8 22 .8 7 .2 .3 .7 .0 .2 .5 .5 .4	78.2 78.9 79.6 79.8 81.0 81.0 82.2 82.3 82.3 82.3 82.5 83.5	755 755 757 802 858 836 845 863 883 887 907 928 922 1005 1295	330.7 330.7 339.9 350.0 353.7 366.8 369.7 378.8 388.0 389.6 499.0 409.0 404.8 444.0 537.8 575.5
104.8	98.4	96.0	98.4	96.0	1.5	17	.5	92.4 95.2	1433	638.6
141.3 133.2 131.2 129.0 123.9 127.2 126.3 125.0 125.0 124.6 124.7	6.7 29.3 36.1 43.2 49.9 66.4 74.5 86.3 88.4 98.3 99.7	2.7 13.9 18.1 26.7 23.1 43.6 53.3 71.1 74.9 95.8	41.9 69.3 70.1 74.5 74.6 79.4 82.0 89.0 89.8 98.0 99.2	22.1 44.6 47.8 53.3 53.5 60.1 64.0 76.0 77.5 95.0 98.2	Plucl		ure . 4 and Duf ure (see			
		6.12	atm.					===		
151.8 150.7 146.0 145.5 142.8 140.2 137.1 137.6 136.0 135.6	12.3 12.8 28.7 31.0 42.6 55.0 56.1 81.2 87.6 89.5 99.3	5.3 5.5 13.6 14.9 22.5 32.3 33.1 62.8 73.4 76.9 98.2	51.5 54.0 66.4 67.6 71.1 75.5 85.3 89.3 90.5 99.2	23.9 28.9 43.6 44.9 49.0 54.1 54.6 69.4 76.5 78.9 98.0	11.8 15.4 20.5 30.4 40.0 40.3	0% 10.32 13.08 17.93 32.27 54.90 55.80	33.3% 21.00 35.41 62.00 103.25	50% 23.9(29.0) 39.22 68.7(6 41.7 6 72.8 120.6	76 10 10
158.8 153.5 151.3 150.7 150.6 148.0 147.3	23.7 38.1 52.5 54.5 53.4 78.1 81.6	10.8 19.4 30.2 32.8 33.6 58.2 63.4 76.5	62.6 69.2 72.5 74.5 74.3 83.2 84.7 90.4	39.5 46.7 50.7 53.3 53.0 65.9 68.4 78.6	50.5 60.3 67.2 70.0 80.4 81.7 84.6	94.31 151.25 206.67 234.12 360.49 380.63 426.31	173.98 277.38 376.45 642.81 760.00 88.9%	189.86 300.73 463.53 704.67 747.73	5 318.8 5 490.6 7 745.3	5 2 6
ļ	no1%		mol%		11.8 15.4	-	-	29.7 36.0	'5)7	
L	V	L	V		20.5 30.4	43.88 76.15	46.08 79.25	36.0 49.0 84. 1)5 10	
1.9 3.9 6.5 8.2 15.6	16.6 29.0 38.5 41.3 50.7	760 mm 16.8 20.1 38.3 44.0	51.0 52.3 59.5 62.5		40.0 40.3 50.5 60.3 67.2 70.0 80.4 81.7 84.6	126.16	130,16 216,78 342,35 526,25 800,76	137.0 139.0 225.0 354.6 480.3 543.1 824.2 873.8	90 98 90 58 34 .0 86	

Konov	alow, 1889				
t	p	t	р	t	р
100	%	85.8	3%	68.	12%
18.7 35.5 49.5 65.4 78.55	41.3 106.3 215.3 443.8 766.5	17.4 40.7 60.45 70.2 79.65 79.95	35.9 133.3 346.35 532.5 782.9 789.5	18,10 40,45 60,65 70,35 80,50	34.2 123.0 327.8 509.7 768.7
50	.4%	33,1	13%		
15.3 15.5 40.6 59.65 60.05 70.3 70.15 80.5 80.55	27.4 27.7 117.5 295.7 301.4 470.7 720.0 720.9	21.15 40.9 60.45 70.4 80.25	85.1 107.1 281.6 436.7 654.0		

Foote	and	Scholes,	1911
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%	p	p	p
	2	5°	
0.00	23.54	23.54	0.00
9.50	30.77	22.63	8.14
20.34	38.41	21.76	16.65
29.97	42.45	19.09	23.38
39.33	46.71	18.77	27.94
53.77	49.40	18.15	31.25
69.04	53.17	16.23	36.94
84.17	56.84	12.92	43.92
89.00	57.57	9.79	47.78
93.51	58.26	7.01	51.25
96.35	58.19	3.21	54.98
100.00	59.72	0.00	59.72
100.00	37.72	0.00	39.72

Dulitskaya, 1945

mol%	p	p _o	P ₁	
		50°		
0.0 9.56 16.0 25.0 33.66 48.70 74.55	42.5 154.5 173.3 187.0 193.3 202.8 216.3 220.0	0.0 74.1 93.3 107.5 114.7 132.0 170.0 220.0	92.5 80.4 80.0 79.5 78.6 70.8 46.3 0.0	

Vrevski	i, 1953			
mo1%	p ₂	p,	p	
		39.76°		
15.48 23.33 36.77 48.08 60.89 88.96 93.90	55.80 63.81 73.36 81.90 90.08 105.00 123.60	45.40 44.80 42.34 40.00 35.22 24.20 7.90	101.2 108.6 115.7 121.9 125.3 129.2 131.5	
		54.81°		
21.20 26.71 36.98 47.88 61.67 77.65 91.45	130.6 139.7 168.2 191.3 252.3	97.5 97.6 - 88.4 74.4 - 23.6	228.1 237.3 247.5 256.6 265.7 273.2 275.9	

E		Þ		
	20°	40°	55°	75°
8.0 9.9 8.4	40 36 -	129 117 105	271 251 230	653 614 567
5		p,	 	
	20°	40°	55°	75°
8.0 9.9 8.4	9.0 13.5	24.5 42.0 47.0	53.0 74.0 103.5	166.0 247.5 258.5
%		P	· · · · · · · · · · · · · · · · · · ·	
	20°	40°	55°	75°
8.0 9.9 8.4	31.0 22.5	104.5 75.0 58.0	218.0 157.0 126.5	487.0 366.5 308.5

							_ 	
Boiling	point .				Young and F	ortey, 1902		
					×	b.t.		
Alluard	1, 1864		در خدم شدر شد سال شدر شدر شدر شدر شدر شدر سال شدر شار شار شار		0	100		
Z		t.	% b. 735,1 mm	t. 760 mm	95.57 100	78.10 A 78.30	Z	
	735.1 mm		م من حد شو من حد من من من من من من شو من حد شو من حد الم	700 mm	dp/dt (Az)	= 30.2 mm/degree		
0.99 1.64 3.23 4.76	99.0 96.1 93.35 92.2 88.9	100.0 97.2 94.4 93.2 89.9	11.12 86.2 16.67 85.2 25 83.1 40 81.85	87.25 86.20 84.05 82.85		mol% dt = 2.	95°	
9.10	88.9	89,9	100 77.5	78.50				
	ر است الله الله الله الله الله الله الله الل				Young, 1902			
Haywood,	, 1899				%	b.t.		
×	b.t.	%	b.t.		95.57	78.15 A	z	
	754.	0 mm			100	78.30		
0.0 18.2 22.2 24.4 30.9 37.4 42.5 45.1	99.25 87.35 85.90 85.40 83.90 83.00 82.35 82.05	47.7 51.2 54.7 62.6 75.1 85.8 100.0	81.85 81.55 80.95 80.40 79.30 78.50 78.30		Wade and Fi % 0 95.5 100	nnemore, 1905 and b.t. 100 78.15 78.30	! Wade, 1904	
Noyes :	and Warfel,	1901-2	b.t.		Darashevski	i and Plyanskii,	1910	
	99,65	79.0	79.133		# # # # # # # # # # # # # # # # # # #	b.t.		
0.5 1.0	98.95 98.55	80.0 81.0	79.050 78.968		700 i		800 m.n	
1.5 2.0 3.0 4.5 5.5 7.0 8.0 10.0 13.0 120.0 22.0 22.0 29.0 35.0	98.55 97.11 95.63 94.84 93.73 93.10 91.80 90.02 87.92 86.11 85.41 84.86 83.87 83.76	82.0 83.0 84.0 85.0 87.0 88.0 90.0 91.0 92.5 93.5 94.0	78.968 78.879 78.806 78.723 78.645 78.575 78.530 78.445 78.323 78.227 78.259 78.221 78.221 78.195		0 97.7 10 89.2 20 84.8 30 82.4 40 81.0 50 79.7 60 78.9 70 78.0 80 77.2 90 76.4 95.57 72.1	8 91.47 9 87.05 2 84.58 0 83.13 8 81.91 2 81.04 3 80.14 2 79.32 6 78.23	101.44 92.86 88.43 85.94 84.49 83.26 82.38 81.47 80.64 79.86 79.54	100.0 91.47 87.05 84.58 83.13 81.91 81.04 80.14 79.32 78.54 78.35 78.23
37.0 48.0 55.0 63.0 65.0 67.0 69.0 71.0 73.1 75.0 77.0 78.0	82.43 81.77 80.642 80.438 80.237 80.042 78.862 79.683 79.505 79.404 79.354 79.214	94.5 95.0 95.5 96.0 96.5 97.0 97.5 98.0 98.5 99.0	78.186 78.177 78.176 78.174 78.179 78.181 78.191 78.205 78.222 78.243 78.270 78.300		Vrevskii, 1 % Az 95.7 96.5 97.6	910 b.t. 74.79 54.81 39.76	654 276 131	

Merriman,	1913				Brun,	, 1931				
p	Λz		b.	t.	1 1 1 1 1 1 1 1 1 1	b.	t.	%	b.t.	
, P	%	b.1.	alcohol	water	0.00	78	3.80	82.85	84.25	
70.0 94.9 129.7 198.4 404.6	0.0 0.5 1.3 2.7 3.75	33.35 39.20 47.63	27.96 33.38 39.24 47.66 63.13	44.63 50.62 57.06 66.31 83.27	25.30 38.85 51.00 65.25	78 79 79	3.55 2.45 20	90.30 95.00 97.00	88.45 92.10 95.85 100.00	
760.0 1075.4 1451.3	4.4 4.05 4.75	63.04 78.15 87.12 95.35	78.30 87.34 95.58	100.00 110.00 119.14	Aldric	h a nd Qu	erféld,	1931		
					vol	9.	b.t.	vol	%	b.t.
Öman and	Gunnelius	, 1925			92. 88. 86.	4	76 90 80 70	0 mm 81.8 80.8 79.9		40 30 20
%	b.t.	<u> </u>	b.t.		84. 82.	2	60 50	78.9 78.4		20 10 0
0.5	99.44	50	81.31		02.	<i>9</i>	50	70,4		· · · · · · · · · · · · · · · · · · ·
1 2 3 4 5 6 7 8	98.88 97.88 96.92 96.05 95.18 94.34 93.55 92.83	51 52 53 54 55 56 57 58 59 61	81.23 81.15 81.07 80.99 80.91 80.83 80.75		Bosnja %	akovic an		ı, 1931		
1 9	92.83	59 59	$80.67 \\ 80.58$		Atm	1.0	1.25	1.5	1.75	2.0
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	92.13 91.45 90.82 90.18 89.57 88.40 87.85 87.34 86.86 86.42 86.03 85.70 85.40 85.40 85.40 84.68	60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 80 81	80.50 80.42 80.34 80.26 80.18 80.10 30.02 79.94 79.87 79.72 79.54 79.36 79.48 79.41		0 5 10 15 20 25 30 40 50 60 70 80 90 100	99.1 94.3 90.5 87.8 86.0 84.7 83.6 82.0 80.9 79.0 78.2 77.8	105.4 99.2 96.3 93.6 91.6 90.2 89.0 87.8 86.5 85.4 83.9 83.0	110.8 105.3 101.4 98.7 96.8 95.5 94.4 92.7 91.8	115.4 1106.0 103.1 101.0 99.5 98.4 97.0 95.7 94.6 93.6 92.7 91.8	119.6 113.8 109.5 106.9 103.5 100.8 99.7 98.6 97.5 96.6 95.7
27 28 29 30 31	84.27 84.09 83.91 83.75 83.60 83.48 83.28	77 78 79 80	79.26 79.18 79.10 79.02 78.95 78.87 78.80 78.72 78.55 78.57		Kleine	ert, 1933	l			
32 33	83.48	82	78.80		Λz	%		P Kg	b.	t.
34 35 36 37 38 39	83.12 82.98 82.84 82.70 82.56 82.43	83 84 85 86 87 88 89	78.37			95.05 94.91 94.80 94.73		4.41 7.73 22.77 20.11	12 14 16 18	0 0
40 41 42 43	82.30 82.19 82.08 81.97 81.87	90 91 92 93 94	78.30 78.24 78.19 78.14 78.10		Silgaro	lo and St	orrow,	1950		
44 45 46	81.76 81.67	95 96	78.06 78.04 78.04		no1	l %	b.t.	mol	Я	b.t.
47 48 49	81.58 81.49 81.40	97 98 99 100	78.04 78.06 78.08 78.10 78.13		0. 9. 17. 25. 37.	.4 .7	100 97.7 95.2 92.5 88.6	69.8 83.4 91.9 96.8 100.0	 	49.5 78.5 78.0

	D. I
Freezing point .	### Pickering, 1893 ### f.t. % f.t.
Rossetti, 1870	0.488 -0.21 31.986 -22.34 0.996 .44 34.852 25.00 1.462 .63 37.456 27.03
% f.t.	1,961 ,85 39,876 29.60
0 - 0	1 3.921 1.66 44.734 32.50
5.85 - 2.63 7.80 - 3.54	4.927 2.09 47.109 34.80 5.897 2.52 50.834 37.60 6.877 3.03 54.681 40.00
14.40 - 7.35 14.62 - 7.47	7.859 3.45 57.591 41.50
19.50 -12.10	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	11.435 5.31 63.839 45.80 11.734 5.49 64.578 46.50 12.833 6.11 64.698 46.80
Raoult, 1874	13.622 6.61 65.830 47.90
	15.323 7.76 67.586 49.35
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
2.41 -0.95 19.80 -10 4.80 -1.95 22.57 -12	17.987 9.67 70.955 53.50 18.942 10.24 72.018 55.75
6.79 -2.80 28.92 -18 9.53 -4.00 33.78 -24 13.18 -5.80 37.37 -28 16.36 -7.80 41.21 -32	.80 18.942 10.24 72.018 55.75 .90 19.936 10.99 72.267 55.50 .30 21.517 12.33 73.443 56.50 .20 22.929 13.61 74.382 58.20
16.36 -7.80 41.21 -32	175 II 22,929 13.61 74.382 58.20
	25.817 16.42 75.041 60.00 27.555 18.22 75.769 61.00
	30.113 -20.49 76.511 -62.00
Guthrie, 1875	
% f.t. % f.t.	1004
5 -2 40 -27 10 -4.3 45 -31	Abegg, 1894 mol% f.t. mol% f.t.
5 -2 40 -27 10 -4.3 45 -31 15 -7.2 50 -37 20 -10.7 55 -42 25 -14.7 60 -45 30 -19.4 70 -53 35 -23.3	
25 -14.7 60 -45 30 -19.4 70 -53	1.608 -3.215 3.236 -7.49 2.098 -4.350 3.883 -9.705 2.589 -5.605 5.178 -15.09
35 -23.3	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Pictet and Altschul, 1895
	% f.t. % f.t.
	2.5 -1.0 22.1 -12.2
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Jones, 1904, Jones and Getman, 1904	Benjamin, 1932
f.t.	mol% f.t. mol% f.t. E
M f.t. M 0.5 -0.895 5.0 -14.200 1.0 1.872 6.0 19.000 2.0 4.010 7.0 24.250 3.0 6.720 8.0 -30.000 4.0 -9.960	19.3 -28.6 69.9 -83.7 -124.5 32.8 -43.9 77.5 -98.0 -123.8 41.0 -51.5 83.8 -115.3 -124.0 49.3 -59.3 92.5 -118.2 -124.5 100.0 -113.5 -
Pushin and Glagoleva, 1923	Lalande, 1934
mol% f.t. E min.	% f.t. % f.t.
0.39 -0.387	10 -5 60 -42 20 -11 70 -50 30 -20 80 -68 40 -29.5 90 -115 50 -36.5 92 -123 100 -114
25 33.2 118.4 5 30 38.7 117.8 -	wt% mol% f.t. wt% mol% f.t.
20	0 0 0 75.0 54.0 -55.0 4.56 1.83 -1.92 79.6 60.5 -65.5 8.96 3.70 4.00 84.8 68.5 91.6 16.12 7.0 8.00 85.8 70.3 91.6 24.03 11.0 14.6 86.3 71.2 93.8 35.44 17.6 25.7 89.3 71.7 109 41.37 21.6 30.6 92.4 82.8 123 49.40 37.6 36.0 94.0 86.2 121.6 59.80 36.8 42.0 97.9 93.0 117 68.90 46.4 -48.6 100.0 100.0 -114.5
	Ross, 1954
Tarasenkov, 1928	% f.t. % f.t.
% f.t. % f.t. 5.1 -2.1 43.0 -33.0 9.3 4.1 46.7 35.4 14.2 6.7 51.9 38 17.8 10.2 56.3 42	10 -4.5 50 -36.5 20 -10.3 60 -44.5 30 -18.8 70 -53.5 40 -29.3
24.4 15.2 61.4 45 29.0 19.1 66.1 48 33.3 24.2 70.2 56 37.6 _28.4 74.7 _67	Hansen and Miller, 1954 (fig.) mol% activity coefficient
Aldrich and Querfeld, 1931	0 3.7 20 2.2 40 1.4 50 1.25
vol% f.t. vol% f.t. 10 -3.6 40 -22.7 20 -8.6 50 -30.7 30 -15.1 60 -38.8	50 1.25 60 1.1 80 1.05 84 1.01

WAIEK	†
Properties of phases.	_
Density	
The following works are only of historical interest, either older than the classical work of Mendeleev, or in recent publications of no sufficient accuracy (less than five decimals):	
Tralles, 1811	
Rudberg, 1831	
Fownes, 1847	
Collardeau, 1861	
Gay-Lussac, 1862	
Landolt, 1865	
Recknagel, 1866	
Hoh, 1876	
Traube, 1885	
Wernstein, 1889	
Nernst, 1893	
Thorpe, 1897	
Blanchard, 1904	
Wade and Finnemore, 1904	
Dunstan and Thole, 1909	
Fresenius and Grunhut, 1912	
Grunmach, 1912	
Herz and Anders, 1918	
Herz, 1918	
Springer and Roth, 1930	
Bordas and Roelens, 1930	
Graffunder and Heymann, 1931	
Carey and Lewis, 1932	
Lalande, 1934	

Tarasow, Bering and Sudorowa, 1936 Ernst, Watkins and Ruwe, 1936

Essex a	nd Ke	11y, 1935	;					
mol% α (liters per mole) = V_{calcul} V_{obs} .								
		5 atm.		6 atm.	1 - 8 atm			
	15	2.9°	16	3.5°	173.9°			
0.0	C	.284	0.	278	0.254			
11.6 20.1		.312 .370		335 355	.300			
24.9		.374		362 353	326			
34.3		.370		363	.329 .327			
45.5 55.5		.384 .392	•	375 395	.343 .343			
34.3 45.5 55.5 70.2 80.3		.432		395 392 403	.350 .363			
93.9 99.6		.492		455	.413			
99.0		.498	•	469	.424			
Mende	lejeff	, 1869			س نے موجودے کے در موجودے س			
Z			đ					
	0°	10°	15°	20°	30°			
100 0.8	30625	0.79788	0.79367	0.78945	0.78096			
90 .8	32119 33482	.81291 .82665	.80862 .82246	.80433 .81801	.79559 .80918			
85 •8	34789 36035	.83967 .85215	.83543 .84792	.83115 .84366	.80918 .82232 .83483			
75 .8	37245	.86427	.86006 .87199	. 85580	. 84719			
65 .8	384 2 0 39595	.87613 .88790	.88377	.86781 .87961	. 85925 . 87125 . 88304			
60 .9	0742 1848	.89944 .91074	.89536 .90678	89129 90275	. 88304 . 89456			
50 0	2040	.92182 .93254	.91796 .92875	91400 9 2 493	.90577 .91710			
45 .9 40 .9	39 77 4939	.94255 .95174	.93900	.93511	.92787			
35 .9)5 7 84)6540	.95174 .95998	.94848 .95 702	.94514 .95403	.93813 .94751			
25 .9	7115	.96672 :97263	.96445 .97080	96185 96877	.95628 .96413			
15 .9	7566 7995	.97816	.97682	97527	.97142			
10 •9	98493 9135	.98409 .99113	.98315 .99041	.98195 .98945	.97892 .98680			
ŏ	9988	99975	.99918	.99831	.99579			
van de	r Wil	ligen, 18	69					
8			d					
		23°						
98.9			79087					
86.8 53.9		•	82434 90327					
38.8			935 2 4 99 7 57					
			77/0/					

Squibb, 1873	
% d	Kreitling, 1892
4° 15° 15.6° 25° 0 1,00000 0,99913 0,99903 0,99707	% d 0° 5° 10° 15°
40 0.94655 93875 93838 93168 44 93875 93056 93018 92313 48 93045 92206 92160 91441 52 92177 91324 91283 90549 56 91297 90427 90379 89640 60 90401 89524 89530 88719 64 89479 88601 88552 87786 68 88516 87631 87582 86801 72 87600 86678 86624 85850 76 86655 85718 85674 84892 80 85683 84750 84694 83915 84 84681 83747 83695 82909 88 83649 82728 82675 81886 92 82593 81658 81601 80823 96 81467 80533 80486 79702 98 80875 79943 79870 79089 99 80579 79645 79595 78806	0 0.99987 0.99999 0.99973 0.99913 5 .99128 .99129 .99097 .99034 10 .98486 .98454 .98395 .98308 15 .97991 .97913 .97810 .97682 20 .97564 .97423 .97262 .97080 25 .97103 .96894 .96669 .96429 30 .96524 .96255 .95974 .95687 35 .95809 .95492 .95170 .94837 40 .94949 .94601 .94250 .93891 45 .93975 .93609 .93239 .92866 50 .92932 .92553 .92171 .91785 55 .91847 .91457 .91064 .90667 60 .90731 .90334 .89933 .89525 65 .89592 .89188 .88780 .88366 70 .88432 .88023 .87609 .87189 75 .87252 .86837 .86418 .85995 80 .86046 .85627 .85205 .84778 85 .84805 .84384 .83957 .83541 90 .83510 .83087 .82662 .82232 95 .82130 .81707 .81282 .80852 100 .80628 .80207 .79783 .79356
Drecker, 1883	g d
\$ d 0° 21.67° 30.68° 40.90° 0 0.99987 0.99790 0.99556 0.99201 8.253 .98764 .98420 .98152 .97765 16.666 .97880 .97311 .96948 .96452 25.668 .97045 .96046 .95537 .94899 34.523 .95923 .94595 .93971 .93221 45.041 .94084 .92509 .91810 .90990 54.473 .92060 .90456 .89727 .88862 65.503 .89622 .87947 .87191 .86390 76.339 .87121 .85411 .84637 .83721 86.631 .84673 .82900 .82117 .81021 100.000 .81074 .79284 .78515 .77616 Naack, 1886 \$ d \$ d 15° 0.0 0.99913 49.12 0.91940 8.21 .98557 53.36 .90999 16.60 .97452 64.64 .88415 25.23 .96367 75.75 .85775 34.58 .94870 .87.45 .82818 38.98 .94035 .99.72 .79404 43.99 .93030	0 0.99823 0.99706 0.99566 0.99405 5 .98941 .98820 .98671 .98496 10 .98195 .98055 .97886 .97691 15 .97531 .97354 .97149 .96923 20 .96878 .96655 .96414 .96152 25 .96176 .95905 .95672 .95321 30 .95380 .95666 .94745 .94409 335 .94503 .94158 .93804 .93242 40 .93245 .93158 .92786 .92407 45 .92485 .92099 .91705 .91307 50 .91393 .90993 .90585 .90176 55 .90274 .89857 .89442 .89028 60 .89115 .88700 .88280 .87857 65 .87949 .87527 .87102 .86671 70 .86767 .86341 .85909 .85483 75 .85567 .85138 .84701 .84263 80 .84348 .83915 .83476 .83035 85 .83099 .82664 .8222 .81780 90 .81801 .81365 .80924 .80483 .95 .80424 .79990 .79553 .79115 100 .78930 .78501 .78073 .77642

Sohet, 189	8					Chene	veau, 190	7			
	d	t	d	t	d	%	d		7 7	d	
0 %				27.0	98%			22°			
38.75 0 72.50	.991 (.972 (.950 10 .930 12 .919 14	20.87% 16° 17 63 86 03.50 20.75 46.50	.971 .947 .931 .914 .902	18 45 72 120.50 146	.072	0 8.1 16.5 25.3 34.5 44.1	5 .98 0 .97 1 .96 2 .94	68 64 30 7 5 13 87	.85	9094 8 78 3 8543 8 2 34 788 6	
32,653%		36,497	6	50.3	329%				. ساد ما ما ما ما ما ما ما ما ما ما ما ما ما		
65 89	.919	3 7. 50	.947 .933 .882	40 75	0.916 .908 .872	Piss	arjewsky	and Karp	, 1908		
110.50	.885	10.50	.869	105.50	. 847	mo1%			d		
145.75	.862 1. .849 15	36 52	.824	116 142.50	.800		1:	2°			
44.50	.794 .781 .752 .726					0.5 1 2 4			0.9958 .9918 .9852 .9734		
133.50	.689					.======:	، خان خان خان خان خان خان خان خان خان خان				
		ر من سر بین سر من سر سر من					rs, 1909				,
Jones, 190	04 and J	ones and	Getman	, 1906			d			t	d
M	d		М		d]]	550%	59.6		29.9	
0.5		0° 93100 88588	5.0		0.963564 0.954880	16.80 35.10 52.75 62.60	0.81113 .79515 .77898 .76945	34. 7 5 51.50	.87967 .86493	16.90 34.15 52.45 62.25 71.30	0.95590 .94496 .93184 .92445 .91684
2.0 3.0	0.9	82056 75380	7.0 8.0		0.947720 0.937332	89.	907%	49.9	22%	19.5	10%
4.0	0,9	69600	0		0.999868	14.60 36.15 53.92 62.47 73.40	0.82315 .80432 .78769 .77946 .76825	35 00	0.91797 .90218 .88692 .87982 .87098	24 75	0.97071 .96246 .95203 .94617 .93881
						80	.622%		.008%		520%
Hess, 1905	15°	20°	d 2	50	30°	14.70 34.10 52.00 61.60	0.84654 .82956 .81332 .80426 .79149	35.00 52.60	.89630 .88858	34.20 53.10 62.00	.95710 .95148
20.750 40.890 59.984	0.99913 .97133 .94118 .90273 .85785 .80889	0.9982 .9695 .9385 .8994 .8539 .8044	7 .9 8 .9 4 .8 3 .8	9707 6781 3605 9617 5006 60009	0.99567 .96605 .93351 .89293 .84622 .79576	15.85 34.15 51.60 61.65 71.45	.769% 0.87182 .85617 .84031 .83092 .82144	15.30 34.30 52.05 61.15	0.860% 0.93905 0.92487 0.91072 0.90308	9. 16.90 34.00 52.95 61.75	.983% 0.98273 .97740 .96862 .96363
						14.70 35.50 52.80 62.45 73.50	0,99037 .98485 .97745 .97226 .96572		=======		=========

Osborne, Mc Kelvyd and Bearce, 1910	Denison, 1912
t d	% d % d
4,907% 9.984% 19.122% 22.918%	15.6° 0°
10 0,991108 9,983963 0,960036 0,953587 15 ,990468 9,83070 ,962747 ,956588 20 ,989530 ,981896 ,965289 ,959440 25 ,988317 ,980461 ,967648 ,962133 30 ,986854 ,978784 ,969810 ,964660 35 ,985163 ,976884 ,971763 ,967016 40 ,983267 ,974781 ,973492 ,969190 30,086% 39,988% 49,961% 59,976%	0 0,9990 20 0,97553 10 .9831 30 .96537 20 .9706 40 .94926 30 .9568 50 .92928 40 .9387 60 .90730 45 .9283 50 .9193 60 .8947 80 .8495 100 .7946
10 0,940390 0,919947 0,921705 0,899323 15 ,943877 ,923874 ,917844 ,895290 20 ,947258 ,927727 ,913922 ,891200	Mathews and Cooke, 1914
25 .950529 .931507 .909937 .887051	t d
30	45%
70.012% 80.036% 90.037% 99.913%	0 0.9507 25 .9307
10 0.875989 0.851882 0.826443 0.798118 15 .871845 .847644 .822174 .793879	40 .9179 55 .9068
20 .867641 .843362 .817866 .789620 25 .863380 .839031 .813516 .785337	70 .8946
35 .854681 .830202 .804673 .776681 40 .850241 .825694 .800172 .772309	Schoorl and Revenboyen, 1917
8 d 8 d	Schoorl and Regenbogen, 1917 % d % d
\$\begin{array}{c ccccccccccccccccccccccccccccccccccc	15° 0 0.99913 42.528 0.933715 8.176 .98555 51.877 .91360 10.695 .98210 67.342 .87813 10.931 .98180 85.971 .83277 14.130 .97770 100 .79359 19.282 .97154
45 .920850 50 .909852 55 .898502	Herz and Anders, 1918
60 .886990 65 875269	% d % d
70 .851336 75 .839114 80 .826596 90 .813622 95 .799912	0 0.99707 25° 70.01 0.86322 20.18 0.96617 100 0.78560 40.69 0.93020
98 .791170 99 .788135 100 .785058	Burrows, 1919
	8 d
	30° 25.44 0.955387 30.47 .946572 36.62 .934695 47.11 .912305 58.89 .885436

WATER + ETHYL ALCOHOL

Bircumshaw, 1922	
% d % d	Brun, 1931
25°	% d % d 0° 20° 0° 20°
0 0.99707 59.58 0.88801 2.72 .99212 68.94 86623 5.21 .98784 77.98 84346 11.10 .97834 87.92 .81900 20.50 .96569 92.10 80782 30.47 .94983 97.00 .79394 40.00 .93176 100.00 .78494 50.22 .90958	0.00 0.99986 0.99823 47.28 0.93422 0.91948 1.206 .99208 .99064 52.15 .92290 .90857 5.16 .99155 .98839 65.69 .96510 .88895 9.51 .98504 .98244 69.24 .89300 .87730 10.65 .98209 .80550 74.70 .87140 .85528 15.80 .97887 .97400 80.18 .86030 .84360 19.05 .97547 .96932 83.20 .84208 .83586 20.09 .97435 .96820 90.95 .83334 .81732
Barbaudy, 1926	31,22 ,96360 ,95204 99,00 ,80908 ,79188 39,45 ,95173 ,93788 99,08 ,80963 ,79188 41,97 ,94395 ,93086
% d % d	
0 0.99707 60.00 0.88699 10.00 .98043 70.00 .86340 20.00 .96639 73.46 .85506 30.00 .95067 79.98 .83911	Spells, 1936 % d % d
40.00 .93148 89.97 .81369	10°
Frost, 1930 Densities at 15°, τ at 0-30° and π at 0-50° (see author)	0 0.99973 60 0.89927 10 .98393 70 .87602 20 .97252 80 .85197 30 .95977 90 .82654 40 .94238 100 .79784 50 .92162
Herz, 1930	Wiley and Harder, 1935
	mo1% d mo1% d
15° 20,750 0,97133 40,890 ,94118 59,984 ,90273 79,989 .85785	25° 2.5 0.9861 37.7 0.8853 4.8 .9782 39.3 .8813 6.0 .9748 49.3 .8603 11.0 .9607 65.3 .8323 22.7 .9274 66.5 .8304 27.0 .9142 81.8 .8059 33.4 .8956
	Harms, 1938
	mo1% d mo1% d
	15°
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Troy and Scott, jr., 1946	Rossetti, 1870
% d % d	% t maximum % t maximum density density
25° 99.73 0;78590 68,39 0,86725 99.53 0,78650 66,58 0,87154 98.94 0,78833 65,56 0,87395 98.57 0,78943 62,13 0,88220	0 +4.12 9.75 -0.19 5.85 +3.17 14.40 -7.35 7.80 +1.82 14.62 -8.48
98.46 0.78979 62.07 0.88217 98.14 0.79076 59.13 0.88900 97.76 0.79187 56.02 0.89616 97.52 0.79259 53.53 0.90186 96.91 0.79440 52.42 0.90438	Hutchinson, 1926 M t maximum
96.06 0.79690 16.14 0.91397 94.90 0.80018 43.96 0.92310 93.26 0.80476 42.59 0.92604 92.49 0.80690 41.50 0.92834 90.24 0.81298 38.97 0.93359 89.83 0.81408 35.25 0.944098 88.16 0.81846 35.25 0.94461	density 2 0.15 1 3.70 0.5 4.25 0.25 4.20 0.125 4.15
86.57 0.82259 30.64 0.94954 86.52 0.82271 30.64 0.95150 85.00 0.82661 29.52 0.95540 84.80 0.82711 27.22 0.95540 84.80 0.82711 25.13 0.95874 84.42 0.82806 23.75 0.96084	Tammann and Schwarzkopf, 1908 t Dv * t Dv t Dv
81.47 0.83546 22.74 0.96519 80.82 0.83709 20.83 0.96515 80.82 0.86770 20.86	10% 12% 20%
80.52	+0.4 -0.21 -1.8 +0.73 -0.4 +0.53 -0.6 -0.18 -2.1 .74 -3.6 7.62 -1.0 -0.31 -2.6 .78 -7.6 15.16 -1.6 -0.50 -4.4 .38 -8.6 15.75 -2.0 -0.66 -4.6 .32 -9.7 17.55 -3.0 -1.17 -F.6 +0.03 -10.4 18.51 -4.0 -1.86 -6.6 -0.50 -11.8 20.11 -5.0 -2.78 -7.6 -1.25 -13.6 21.97 -6.0 -3.71 -8.0 -1.59 -14.0 22.49 -7.0 -4.82 -9.2 -2.58 -15.2 23.42 -9.6 -2.95 -15.6 +24.06
Grišwold, Chu and Winsauer, 1949	in cc . 10 per 1 cc at 0°
% d	
25°	Turbaba, 1890
0 0.99707 32.3 .94619 48.5 .91314	mo1% a.10 ⁷ b.10 ⁹
66.1 .87243 100.0 .78459	7.40 1810 5000 3.85 152 5970
Jacobson, 1951	v _t = 1 + a t + b t ²
vol% d vol% d	
20° 0 0.9982 58.9 0.9037 9.9 .9839 68.6 .8847 19.3 .9734 79.1 .8566 31.3 .9571 89.6 8283 39.1 .9448 100.0 .7919 48.7 .9258	

	W -14 1000
Drecker, 1883	Noesveld, 1923
g τ.107 g τ.107	π 1 atm. 1 - 500 1 - 1000 1 - 1500
25° 0 2549 54.473 9098 8.253 2937 65.503 9723 16.666 4074 76.339 10771 25.668 5942 86.631 10731 34.523 7407 100 11109 45.041 3514	0 44.5 42.3 39.5 37.1 10 41.5 39.3 37.2 35.2 20 39.7 37.8 35.9 33.9 30 41.8 39.5 37.1 34.7 40 45.8 43.0 40.0 37.0 55 57.9 51.7 46.6 42.5 70 71.5 61.6 54.1 49.3 85 82.0 71.0 61.5 54.8 100 100.6 84.8 72.5 63.2
% π % π 25°	
0 45.5 62.95 65.0 12.37 42.0 79.72 80.7 23.91 41.1 85.13 88.6 34.61 44.8 100 113.8 50.29 54.5	Tarasow, Bering and Sudorowa, 1936 π π π π 20°
Pagliani and Palazzo, 1883	10 43.9 30 40.7 15 41.5 35 42.3 20 40.8 40 44.6 25 40.5
% π % π	
0° 0 50.3 23.98 38.1 6.69 46.4 29.19 39.1 11.38 43.1 38.28 43.4 13.29 41.7 50.88 49.9 19.67 38.5 100 97.0	Jacobson, 1951 vo1% π vo1% π 20° 0 45.35 58.9 50.60
Pagliani and Palazzo, 1883, Pagliani, 1389	9.9 42.35 68.6 56.25 19.3 39.90 79.1 65.03 31.3 39.33 89.6 74.82 39.1 41.22 100.0 92.53 48.7 45.13
1 π t π t π 1 π 1 π 1 π 1 π 1 π 1 π 1 π	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
19.67% 23.98% 29.19%	
0 39.7 0 39.3 0 40.3 21.3 40.1 24.65 40.8 19.65 41.3 38.28% 50.58% 0 44.6 0 50.9	

									
Viscosity and	surface tensi	on		Noacl	1886				
	1044			t	0%	8.71%	η 16.6%	25.23%	34.58%
Poisseuille,	1846							6459.9	7320.7
Viscosity (see author)	ر النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي به مديد النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي النوي	سو حدر حرن الله الله الله الله الله يعرب حرب الله الله الله الله الله الله الله الله	0 5 10 15	1311.0 1523.0 1307.2 1140.1	2865.3 2336.4 1947.5 1650.1	4535.1 3511.1 2808.2 2302.4	4864.6 3784.0 3024.8	5573.9 3721.2 3521.1
				20 25 30	1006.8 898.2 808.2	1419.5 1234.7 1084.6	1924.9 1635.1 1407.1	2470.4 2054.2 1734.2	2875.9 2386.4 2003.4
Stephan, 1882				35 40	732.4 667.6	961.0 857.7	1224.4 1075.5	1483.3 1282.5	$1711.4 \\ 1474.2$
t	η	t	η	45 50	612.4 564.2	770.4 696.3	953.0 849.8	1120.1 986.5 875.3	1282.0 1124.6
	35.11 %			55 60	521.8 484.5	632.4 577.0	763.0 689.0	781.8	994.2 884.7
10.21 22.59	3869 2553	29.94	2057	0 5 10	$\frac{38.98\%}{7320.7}$	$\frac{43.99\%}{7067.1}$	49.12%	53.36%	
	48.55 %			10 15	5573.9 3721.2	5512.1 3715.6	6675.5 5271.7 4226.6	6321.1 5017.5	5107.2 4254.7
12.56 13.42	3759 3604	26.47 30.02	2395 2189	20 25	3521.1 2875.9	3523.6 2896.4	3441.2 2846.5	4046.9 3316.7 2758.6	3552.5 2985.0
23.61	2656 49,00 %		ļ	30 35	2336.4 2003.4	2415.4 2038.4	2385.3 2023.9	2324.9 1982.2	2926.5 2156.1 1855.3
10.00 12.42	4133	21.39 25.00	2825 2551	40 45	1711.4 1474.2	1740.7 1502.3	1736.3 1504.3	1707.8 1485.7	1609.5 1406.6
13.42 13.42 14.99	3754 3653 3438	25.01 30.77	2524 2139	50 55	1282.0 1124.6	1308.3 1149.1	1314.6 1158.2	1302.9 1151.7	1238.1 1096.9
18.30 20.20	3099 2926	31.20	2102	60	994.2 884.7	1017.0 905.8	$\frac{1027.4}{917.4}$	$\frac{1024.7}{917.4}$	977.7 877.0
_	70.00.%				75.7 5	% 87.4	15% 99.7	2%	İ
10.19 11.80	3263 3083	21.52 24.78	2277 2104	0 5	4 <mark>073.2</mark> 3443.4	2940. 2556.	4 1801. 2 1633.		
14.98 16.10	2768 2680	25.01 28.49	2068 1888	10 15 20	2917.3 2497.5	2228. 1950.	7 1480	0	
19.89 20.13	2421 2376	29.20	1849	20 25 30 35	2152.0 1867.0	1715. 1516.	7 1215. 8 1104.	9 4	
				35 40	1632,4 1436,8 1272,6	1347. 1202. 1078.	7 916.	1	
				40 45 50	1272.6 1133.7 1015.7	971. 879.	7 730.	6	
	Battelli, 1884			55 60	914.4 827.2	798. 728.	6 650.	0	
% 0°	10° 0)° 10°							
0 1775 20.35 5365	1309 177 3363 536			Var	enne and	Godefroy	, 1903		
29.87 6912 33.82 7201	4138 691 4209 720	14 4142	(second series)	vol		nds of	vo1%	seconds	of
38.98 7024 46.00 6722	4273 703 4236 673	26 4277 24 4240	30.100)		f1		- 40	flow	
56.10 6107 71.87 1442	3975 61 3113 44	45 3113		_	1	at roo	om temp. 55	502	
100 1338	1520 18	43 1525		0 5 10	2	00 26	60 65	484 473	
				15 20	2	64 15	70 75	442 416	
				25 30	3	66 08	80 85	383 348	
				35 40	4	47 60	90 95	323 284	
				45 50		65 83	100	228	
								=	

Planchard 1004		1004	
Blanchard, 1904 M n (water=1) % n (water=1)	Jones and I	Mc Master, 1906	
M η (water=1) % η (water=1) 25°	%		η
		00	2 5°
0.257 .241 8.0 1.352	0 0	1778 5264	891 1810
0.507 .268 39.0 2.628 3.445 .571 46.0 2.650 14.330 2.466 56.1 2.551	25 50	6720	2405
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	75 100	516 7 1856	2118 1106
71.9 2.180 88.0 1.675 92.3 1.509		77	
¶ 98.8 1.259 [W	Anders, 1907	
99.4 1.236 100.0 1.211			
	%	^η (wε	ter=1)
Jones 1004		_	
Jones, 1904	20.18	1.000 1.937	
vol% η τ.104 0° 25°	40.69 70.01	2.612 2.218	
	100.00	1.210	
0 1778 891 398 25 5264 1810 763 50 6720 2405 717 75 5167 2118 57.5 100 1856 1106 271			
25 5264 1810 763 50 6720 2405 717 75 5167 2118 57.5			:
ll	Hirata, 1	908	
2 ^{nu} series 0 1778 891 398	vo1%	η(alcohol=1)	vol% (alcohol=1)
25 5135 1661 837		25	>
50 7005 2170 892 75 4996 1935 633 100 2108 1145 337	75 87.5	1.3300	98.4375 1.0308
1110 807	93.75	.4715 .2575 .1407	99.21875 1.0412 100 1.0000
	96.875	.1407	
Dunstan, 1904 and 1905			
% n % n	Pissarjews	ky and Karp, 190	98
25°	N	η (wate	r=1)
0 891.0 55.58 2273	1:	2°	
3.60 959.6 55.83 2273 5.09 1013 57.51 2247	0.5	1.1080	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1 2	.2338 .5301	
24.66 1851 60.49 2226 29.63 2129 61.06 2212	4	2.2203	
I 32.40 2162 65.36 2104 II			
1 38.26 2301 70.54 1995 H			
41.21 2327 73.90 1957 46.17 2368 80.20 1744 47.72 2354 100.00 1113	Dunstan and	1 Thole, 1909	
50.20 2337 100.00 1115	%	η	300
		20° 25°	30°
		1002 891 2162 1829	798 1505
	39.65	2789 2343	1936
	61,85	2797 2351 2510 2173	1987 1834
	78.09 2 99.20 1	2004 1804 1241 1115	1530 99 0. 5

Bingham	ı, White a	nd al.,	1913			Mathews a	nd Cooke,	1914	
t			n			t		n	
mo1%	0	5,90	12.47	24.02	29.82	<u>-</u>	45%		
%	0	13.83	22.71	44.70	52.08	0	10,0	6933	
25.00 30.02 35.02 40.02 45.02	800.20 723.29	1504 1298 1136 1001 889.52	2086 1759 1502 1300 1136	2276 1726 1305	2347 1992 1707 1482 1297	0 25 40 55 70		2360 1417 969.3 688.4	
50.02 55.01 60.00 64.98 69.96	473.40 436.90 407.30	798.85 721.66 657.67 598.40 550.40	897.34 806.90 727.80 660.37 605.60	1143 1114 905.05 814.86 736.98	1140 1014 907.02 815.39 736.98 669.79	Jones,	1915 and al		
74.96 79.96	380.10 356.70	507.60	545.40	671.41	669.79 610.80	V0170	15°	η 25°	35°
mo1%	40.0	50.02	69,91	100		0 25 50 75	2585 3400	890 1769 2286 1997	1270 1618 1537
	63:02	71.90	85.50	100		100	2762	1110	-
25.01 30.02 35.02 40.02 45.02 50.02 55.01 60.00 64.98 69.96 74.96 79.96	2180 1874 1637 1422 1254 1104 985.02 885.26 798.40 657.89 596.20	1982 1705 1492 1314 1164 1040 929.88 835.78 757.97 688.89 626.60	741.5 7 674.4 9 617.5	51 596.0 44 551.0 30 510.5	77 99 61 10 0	Herz, 0 20.18 40.69 70.01 100	1918 25°	895 1778 2338 1985 1092	
	man, Davis	s and al.	.,1914			Kono, 19	23		
% 	15°	25°	35°	 		%	η (water	=1) %	η(water=1)
100 95 90 80 70 60	1292 1450 1530 1674 1767 2205 2232 2625 2634 3039 3049	1054 1183 1227 1314 1392 1679 1701 1913 1916 2169 2175	871 971 993 1044 1100 1297 1316 1428 1437 1609 1599			6.16 9.79 14.65 21.92 27.37 30.50 33.74	1.305 .542 .870 2.387 .707 .843 .929	15° 40.58 50.17 60.43 68.29 83.95 94.48 99.80	3.013 2.939 .730 .460 1.799 .373
50 40	3293 3333 3427 3421	2264 2315 2328 2318	1625 1662 1662 1643	(two se	ries)	Springer	and Roth,	1930	
30	31 <i>77</i> 3165	2115 2112	1599 1494			%	η (water		η(water ^{0°} =1)
20	2569 2551	1786 1766	1291 1296					25°	
10	1727 1752 1410	1270 1288	975 982			0.0	0.5552	47.72	1.3230
5 0	1410 1410 1137	1073 1072 895	847 847 725			12.5 32.4 37.39 41.21	0.5552 0.8095 1.2136 .2610	57.51 70.54 100.00	.2966 .1450
						41.21	.3220		

Lemonde	e, 1936 (f	ig.)				Frank	e, 1932		
mol%	η	n	101%	η		mo1%	diff.ratio	mo1%	diff.ratio
		10°				11.01%	(cm²/day)		(cm ² /day)
0 1 21 40 62.5	1300 1400 3190 4230 4110		75 92.5 98 100	3400 2160 1640 1450		0.48 1.04 1.72 2.17 2.70	20° 0.823 .800 .773	7.13 7.71 8.22 8.76 9.30	0.383 .341 .310 .306 .302
mo1%	η	1	mol%	η		3.28 3.89	.664 .608	9.30 9.86 10.38	.296 .289
l		18°		,		4.34 4.89	.571	10.95 11.46	.321 .360
0 1 20 59	1045 1100 2620 3000]	89 99 .00	1860 1300 1240		5.45 6.19 6.56	.501 .466	11.95 12.53 13.09	.405 .457 .725
						Lemo	nde, 1938		· <u>-</u> · · · · · · · · · · · · · · · · · · ·
Spells.	, 1936					vo1%		vo1%	D
×	η	%	n				10°	18°	
	10°					1	0.84	1	1.09
0 10 20 30 40 50	1308 2179 3165 4050 4390 4180	60 70 80 90 100	3770 3268 2710 2101 1466			1 21 40 62.5 75 92.5 98	.57 .31 .21 .30	29 59 89 99	0.62 0.32 0.82 1.10
Dolian	and Brisco	e, 1937							
mol%	η	mol%	η			Van Vel	den, Van der V	oort and Go	rter, 1946
	25.0	0°				'"" '"	den, van der v		
100 85.3 69.8 55.1	1070 1290 1530 1820	31.5 17.0 7.1	2280 2270 1500			%	Soret coeff , 10 ⁴	. Dtherm . 10 ⁸	
Silgard	o and Starr	ow, 195	0			20 28 36 43	+7.2 0 -7.0 -11.0	+1.5 0 -1.1 -1.7	+2.1 - +1.6 +1.5 ⁵
mo1%	η		mol%		n	52 64	-9.9 -6.4	-1.9 -1.5	+1.9 +2.4
	at b.t.	100°	•	at b.t.	100°	===			
0.0 9.0 17.4 25.7 37.4 54.0	12.55 12.51 12.33 12.20 11.84 11.49	12.55 12.58 12.52 12.38 12.26 11.97	69.8 83.4 91.9 96.8 100.0	11.16 10.88 10.77 10.70 10.16	11.83 11.63 11.39 11.14 10.80				

			<u></u>							
						Rodenbe	ek, 1879			
Hammond	and Stoke	es, 1953				d	٥	d	σ	
c				3			17	.5°		
0.936 1.062	0.0 0.0	1.214 .220	8.544 8.332 9.576	0.904 .894	1.093 .091	0.800 .840 .860 .880 .900	22.74 25.08 26.40 27.74 28.94	0.940 .950 .960 .970 .980	32.57 34.91 37.06 43.64 48.85	
1.873 4.011 4.163 5.074 8.024	0.0 0.633 0.503 0.755 1.143	.205 .167 .165 .136 .101	9.576 8.447 9.227 13.340 17.110	.873 1.352 0.845 1.747 2.268	.084 .034 .079 .004 0.951	.920	30.43 30.93	.998	71,68	
17.65 26.19	1.775 1.645	0.950 .853 .852	55.96 62.98 63.35	36.06 35.84 35.50	0.378 .406	Traube,				
25.53 33.63	2.160 2.506	.852 .754 .752			.404		<u>d</u>	%	σ	
34.57 43.34 43.54 49.41 49.66 51.19 51.52 55.58	32.35 32.18 35.96 35.73 30.37 30.12 36.36	.752 0.396 .399 .368 .362 .395 .393 .379	69.02 69.23 74.04 74.32 77.15 77.34 77.49 77.59	62.43 62.25 61.83 61.61 70.62 68.33 72.28 70.44 72.10	0.589 .575 .675 .684 .927 .885 .980 .950	1.96 3.85 5.66 7.41 9.09 10.71 12.28 13.79	15° 63.40 57.28 54.30 51.62 49.03 47.02 45.12 43.77	15.25 16.67 23.08 28.57 33.33 37.50 44.44 61.54	42.33 40.96 36.51 33.56 31.79 30.51 29.13 22.45	
land 2	= c on to	wo sides	of the di	aphragme	•					
Tichacel	k. Kmak a	and Drick	amer, 1956	·		ļ	in, 1889			
mol%		D		<u> </u>			<u> </u>	%	a	
11.6 27.4 41.8 73.4 85.5	25°	+0.2 -0.5 -1.4 -0.5	29 90 47 93			0 4.08 7.65 9.94 12.37 17.50 20.07 33.57 35.24	71.80 60.94 55.49 52.36 47.96 44.09 40.80 33.43	0 10 20 30 40 50 60	72.2 51.2 40.6 34.7 31.2 29.1 27.7 26.6	(second series)
Musculu	us, 1865					35.24 53.08 62.43 74.94 88.25 100.00	32.12 28.73 27.07 25.59 23.79 22.42	80 90 100	25.4 24.1 22.5	
8	capillar	y %		illary	و عبر جدهد مد عبر هبر مد مد					
		15°	ris	e 						
	1,000 0,904 .842 .780 .743 .706 .678 .651	16 18 20 22 24 26 28 30	3 .6 5 .5 2 .5 5 .5 5 .5	05 83 64 45						

Sohet, 1898		Morgan ai	nd Neidle, 191	13	
t o t o		%	o 9	€ ø	
0% 36.497% 16 72.33 17.50 28.83 38.75 69.61 37.50 27.99 72.50 64.43 96 24.66 11 58.14 110.50 24.06 134 53.54 136 22.30 150.50 50.16 152 21.27	1 1 2	0.000 0.979 2.143 4.994 0.385 7.979 5.000 9'.980	65.600 56 60.847 66 53.137 7 44.668 75 37.311 8	4.89 29.3 0.00 26.3 0.04 25.3 1.85 24.1 5.06 23.3 5.57 22.3 5.57 21.3	521 352 198 350
20.37% 50.329%	 				
17 37.69 18.50 26.10 63 34.97 40 25.41 86 33.46 75 23.47 103.50 32.24 105.50 22.50 120.75 31.13 116 20.92 146.50 29.11 142.50 18.79 27.098% 100%	1 2	0% 0 75.49 0 74.01 20 72.53 0 71.03	25% 50% 36.455 28.3 35.186 27.7 34.014 27.1 32.940 26.5	75% 91 26.157 68 25.406 45 24.654	95.57% 100% 23.681 23.090 22.915 22.312 22.150 21.534 21.384 20.756
18 34.41 20 21.19 45 33.02 44.50 29.27 72 31.63 74 18.39 120.50 28.56 101 16.31 146 26.71 133.50 13.09		Reinhold,	1913		
32.653% 16 30.58		t	σ	t	σ
10		0 2 4 9.5 20 25 30	86.1 86.7 80.6 86.6 88.2 85.1 83.0	0 % 45 50 55 60 65 70	82.6 78.0 74.4 72.3 70.4 72.9 71.7
Descude, 1903		35 40	81.3 83.7	75 80 85	69.1 64.3
vo1% σ vo1% σ 15° 0 73.60 60 28.20		5 20 40	53.9 51.2 46.8	0 % 60 65	43.2 41.9
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		4 20 40	37.7 34.9 32.4	0 % 60 65	30.5 29.5
		0 20 40	32.1 30.1 28.2	60 65 0 %	26.1 25.4
Grunmach, 1912		0 20	28.7 27.1	60 65	23.4 22.6
% t	σ	40	25.5	4 %	
10.0 20.54 46.0 59.8 19.47 20.1 19.19 36.2 69.9 18.44 30.0 19.77 32.0 80.1 18.48 39.81 18.93 28.3 89.8 18.50 50.0 19.02 25.9	3 23.0 f	-10 - 5 + 1 20	26.6 25.5 24.1 23.3	40 60 65	21.4 19.8 19.0

p 1020	***			
Fürth, 1920	Valentiner and	Hohls,	1938	
vol% σ vol% σ	t		σ	
25° 100 21.30 40 31.88 98 23.13 32.7 34.24 95 23.73 25 27.50 90 24.14 16 41.30 75 25.76 10.8 44.91 63.5 26.83 3.5 57.72 50 23.74 0 71.78	20 22 30 40 50		0 vol \$\% 72.72 70.95 69.19 67.52	5 vol % 58.11 57.82 56.55 54.88 53.31 24 vol %
Bircumshaw, 1922	20 22 30 40 50		51.25 50.96 49.78 48.22 46.75	37.93 37.73 36.75 35.47 34.30
% o % o			34 vol %	48 vol %
25° 0 72.90 59.58 26.71 2.72 60.79 68.94 25.71 5.21 54.87 77.98 24.73 11.10 46.03 87.92 23.64 20.50 37.53 92.10 23.18	20 23 30 40 50		33.22 32.93 32.34 31.56 30.67	30.09 - 29.50 28.91 28.22
30.47 32.25 97.00 22.49 40.00 29.63 100.00 22.03 50.22 27.89	20 30 40 50		60 vol % 27.54 26.85 26.17 25.48	72 vol % 26.26* 25.58 24.89 24.11
Butler and Whightman, 1932	20		80 vol % 24.70	96 vol % 23.03
mol% σ mol% σ	30 40		24.01 23.32	22.15 21.36
25°	50		22.54	20.38
0 71.97 30 27.60 2 55.57 40 26.43 4 47.86 50 25.43 6.4 42.12 60 24.67 10 36.79 70 23.93 12 34.42 80 23.29	Brun, 1931	σ	d	
$\ 15 32.20 90 \overline{22.59} $			%	σ .
20 29.97 100 21.93 25 28.49	100.00 88.22 79.66 66.52 49.85	23.34 24.43 25.34 26.96 29.05	20° 44.80 33.26 20.25 11.28 0.00	30.18 33.12 40.64 47.52
Ernst, Wathuis and Ruwe, 1936				73.00
% o % o				
25° 0 72.0 60 26.9 10 46.6 70 26.1 20 37.7 80 25.2 30 32.3 90 24.4 40 29.6 100 22.0				

Teitelbat mol %	um, Gortal	lova and	Sidorova	1, 1951			and elec			-	
0 0.18 0.26 0.35 1.2 1.8 3.5 7.3 11.3 17.2 31.6 56.1 74.5 100.0	-10°	-5° -2.29 66.65 63.22 56.29 46.37 38.30 33.35 29.81 27.54 26.11 24.49 20° 72.75 69.86	0° 75.70 72.81 72.09 71.70 65.87 62.44 54.94 45.31 37.52 33.06 29.38 27.04 25.67 23.94	+5° 74.96 72.16 71.31 70.78 65.08 61.52 53.81 44.32 36.94 29.03 26.64 29.03 26.65 23.64 30° 71.21 68.22 67.76 67.17	10° 74.27 71.31 70.65 70.00 64.16 60.39 52.68 43.40 36.32 32.28 28.67 26.41 24.86 23.17 35° 70.37 67.57	spectral	20°		n		
0 .18 0.26 0.35 1.2 1.8 3.5 7.3 11.3 17.2 31.6 56.1 1.2 1.8 0.26 0.35 1.2 1.8 3.5 7.3 11.3 17.2 31.6 56.1 1.2 1.8 3.5 7.3 17.2 31.6 56.1	69.34 63.37 59.47 51.73 35.47 31.86 25.98 24.46 22.78 40° 69.52 66.45 59.76 55.57 38.51	69.86 69.27 68.81 62.58 58.55 50.83 41.35 35.12 31.36 27.97 25.70 23.88 23.32 45° 76 66.12 65.80 64.94 55.02 47.29 37.88 32.57	69.08 68.55 67.90 61.73 57.70 50.06 40.71 34.55 31.01 27.68 25.13 23.55 64.88 64.98 64.98 54.33 46.59 37.52 31.14	61.00 59.96 49.21 39.93 33.91 30.66 27.19 24.82 23.22 21.54 55° 64.75 64.75 64.75 64.16 36.89 36.87 37.87 38.8	67.17 66.33 60.35 56.26 48.57 39.01 33.42 30.30 26.97 24.43 22.76 21.00 60.18 64.16 63.50 64.16 63.50 65.93 57.93	A a B C D E b F G G H H H	98.9% 1.35700 .35768 .35824 .35890 .36070 .36299 .36338 .36494 .36700 .36867 .36939 .37055 .37193	1 . 35955	.36402 .36560 .36769 .36932 .37001	38.8% 1.35284 .35363 .35427 .35499 .35686 .35921 .35931 .36319 .36483 .36549 .36664 .36795	1.32865 .32948 .33015 .33086 .33273 .33497 .33540 .33696 .34029 .34194 .34198 .34319
31.6 56.1 74.5 100.0	29.81 26.48 24.07 22.44 20.69	32.57 29.74 26.27 23.72 22.04 20.23	32.14 29.45 25.84 23.22 21.58 19.84	28.82 25.70 22.87 21.12 19.38	31.44 28.32 25.28 21.37 20.80 18.99	%	15°	20°	25°	30°	
	20.07	20.23	17.04	19.38	18.99	0 20.750 40.890 59.984 79.989 100.000	1.33775 .35169 .36337 .36877 .37125 .36906	1.33739 .35075 .36164 .36703 .36934 .36757	1.33684 .34969 .36019 .36526 .36740 .36557	.34888	

ach	and Lythgo	e, 1905		Che	nevea	u, 1907		
6	n _D	%	n _D	%		n _D	%	a
	20	>				22	0	
)	1,33299	51 52	1.36149 .36174	0		1.3328	54.29	1.3612 .3631
1 2 3	.33358 .33420	53	.36195		.15	.3379 .3439	64. 85 75.98 87.68	.3638
3 1	.33478	54 55	.36217	25	.31	.3498 .3548	87.68 100.00	.3635 .3604
5	.33601	56	.36238 .36256	44	.16	.3587	200.00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
7	.33671 .33739	57 58	.36277 .36294	<u> </u>				
\$ 5 7 3)	.33812	54 55 56 57 58 59 60	.36312 .36347					
)	.33881 .33949 .34018	61	.36363 .36377					
•	.34086	62 63 64	.36394	Race	e, 19	80		
3	.34158 .34226	64 65	.36405 .36420	76		n _D	%	n _D
	.34292 .34369	65 66 67	.36433 .36443	 				
; }	.34445	68	.36454	;∦		15.5	, ~	
	.34519 .34594	68 69 70 71 72 73 74 75 76 77 78 79	.36464 .36471	0 5		1.33350	55 60	1.36421 .36506
,	.34669 .34739	71 72	.36478 .36485] 10		.34001	65	. 36573
	.34809 .34884	73 74	.3649 2 .36499	15 20		.34368 .34737	75	. 36629 . 36675
	34954	7 5	.36499	25		.35112	70 75 77 80	. 36675 . 36686 . 36675
	.35025 .35091	76 77	.36496 .36496	20 25 30 35 40		.35471	85	. 36634 . 36589
	.35158 .35224	78 79	.36492 .36489	45		.35960 .36136	90 95	. 36524
	.35286 .35352	80 81	.36485 .36482	50		.36306	100	. 36444
	.25403	82	.36478 .36475	==				
	.35450 .355 0 1	83 84	.36468	i				
	.35547 .35599	85 86	.36457 .36447	ĺ.				
	.35638 .35678	87 88	.36436 .36427	And	rews	1908		
	.35718 .35757 .35797	89 90	.36416 .36405	%		n _D	8	n _D
	. 35833	91 92	.36387 .36366			2 5°		
	.35869	93 94	.36336 .36312	100	1	35941	86 85	1.36290 .36297
	.35937 .35973	95 96	36294	98		. 35984 . 36024	84	. 36305
	.36002	97	.36252 .36217	96		. 36061 . 36094	83 82	.36312 .36319
	.36031 .36063	98 99 100	.36181 .36145	95 94		. 36125	81 80	. 363 2 6 . 36331
	.36092 .36120	100		93		. 36153 . 36178	79.3 79	. 363315 . 363313
				99 98 97 96 95 94 93 92 91 90 89 88		.36200 .36221	78	. 363302
				90 89		. 36239	78 77 76	. 363286 . 363265
				88 87		. 36255 . 36269 . 36280	75 74	. 363239 . 363208
				,			70	. 363038
				1				
				1				

Doros	shevski a n d D)vorzhane	chik, 1	908		Sider	sky, 1910				
%		n			**	×	n _D	Ж	n _D		
ļ	Li	T1		D			27	.5°			
0 10 20 30 40 46 50 55 60 65	1.33126 .33800 .34550 .35245 .35725 .35950 .36070 .36184 .36283 .36367	.342 .349 .356 .361 .363	210 958 653 132 360 482	.33345 .34020 .34778 .35470 .35948 .36170 .36290 .36405 .36505 .36586		0 1 2 3 4 5 10 20	1.33320 .33367 .33416 .33466 .33517 .33568 .33843 .34441	30 40 50 59.23 60 70 80 85.69	1,35043 ,35565 ,36953 ,36229 ,36248 ,36448 ,36565 ,36587	; 3 9 3 3	
70 75 30 35 90 95	.36423 .36457 .36468 .36457 .36410	.368 .368 .368	336 367 383 365 310	.36645 .36676 .36690 .36678 .36626		Elsey	and Lynn,	1923	%	n_	
100	.36118	.365		.36518 .3633 2	!		25°	30°		ⁿ D 25°	30°
%	17.5° 2	n _D	22°	24°		28.42 27.74 25.43	1.35123 .35086 .34961 .34818	1.35000 .34474 .34847	13.94 11.44 9.50 7.67	1.34181 .34001 .33864	1.34411 .33934 .33807
0 1.55 2.92 4.23 6.35 8.35	.33414 .33503 .33590 .33733 .33873	.33297 1 .33389 .33478 .33566 .33707 .33845 .33912	.33370 .33458 .33547 .33686 .33822	1.33258 .33348 .33437 .33527 .33665 .33798		25.43 23.16 21.57 19.43 17.42 15.32	.34709 .34566 .34428 .34276	.34718 .34609 .34476 .34342 .34204	7.67 5.62 3.95 2.44	.33739 .33604 .33498 .33402	.33679 .33550 .33444 .33351
9.27 12.44 14.00 17.04	.34173 .34287 .34515	.34141 .34251 .34478	.33889 .34113 .34222 .34446	.33864 .34087 .34193		Benne	ett and Gar	ratt, 1925	3		
22.17 25.24	.34895 .35120	.34845 .35063	.34806 .35017	.34766		<i>d</i>	n _D	d	n _D		
29.22 30.25 33.63 38.33 39.35 44.67 45.93 48.35 50.00 54.93 69.96 74.99 80.00 85.05	.35815 .35851 .36045 .36087 .36159 .36203 .36323 .36328 .36401 .36453 .36482	.36116 .36231 .36420 .36496 .36553 .36584 .36588	.35257 .35312 .35472 .35678 .35716 .35900 .35934 .36045 .36159 .36254 .36325 .36375 .36401 .36409 .36337	.35206 .35259 .35414 .35620 .35656 .35833 .35869 .35937 .36988 .36181 .36251 .36297 .36323 .36330		0.7953 .8152 .8325 .8491 .8648 .8767 .8890 .9012 .9123 .9230 .9331 .9427	1.3618 .3635 .3643 .3650 .3648 .3640 .3633 .3623 .3615	20° 0.9508 .9580 .9646 .9698 .9749 .9801 .9855 .9894 .9914 .9938	1.35 .35 .34 .34 .34 .33 .33 .33	23 92 60 32 00 70 50 41 35	
90.02 94.73 100.00	.36419 .36319 .36129	. 36421	.36238 .36049	.36252 .36156 .35966		Barba	udy, 19 2 6				
K	n _D	15°	%	10°	15°	%	n _D	%	n _D		
4.47 9.67 12.88 15.79 17.09 18.80 21.20 24.00 26.81	1.33686 1 .34043 .34286 .34514 .34627 .34764 .34962 .35153	.33640 .33995 .34235 .34452 .34554 .34683 .34872 .35061 .35233	28.82 32.25 35.75 38.54 41.01 43.00 46.70 50.62	1.35502 .35710 .35903 .36030 .36140 .36216 .36346 .36447	1.35393 .35586 .35772 .35892 .35988 .36064 .36191 .36286	100.00 89.97 79.98 73.46 70.00 60.00	1.3592 .3620 .3629 .3628 .3626	50,00 40,00 30,00 20,00 10,00 0,00	1, 35 96 , 35 65 , 35 14 , 34 60 , 33 88 , 33 2 3		

		Y	
Schoorl, 1929		d ^(15,6°) n ₅₈₉₃	
% n _D %	n _D	15.6° 18° 19°	
17.5° 0 1.33320 62.23 30.12 .35412 80.35 40.17 .35885 99.86 50.21 .36215	1.36470 .36603 .36245	0.9373 1.36942 1.35861 1.35831 .9375 .36944 .35869 .35839 .9376 .36942 .35867 .35838 .9378 .36939 .35867 .35833 .9380 .36937 .35865 .35836 .9382 .36933 .35857 .35827 .9384 .36931 .35859 .35828 .9386 .36926 .35848 .35818 .9388 .36918 .35851 .35821 .9392 .36907 .35841 .35812	
Herz, 1930		20° 21° 22°	
% n _F		0.9373 1.35804 1.35775 1.35747 .9375 .35811 .35781 .35751	
15° 20.750 1.35169 40.890 .36337 59.984 .36877 79.989 .37125		.9375 .35811 .35781 .35781 .9376 .35808 .35779 .35748 .9378 .35805 .35772 .35742 .9380 .35808 .35779 .35749 .9382 .35799 .35769 .35739 .9384 .35800 .35770 .35741 .9386 .35788 .35769 .35728 .9388 .35791 .35762 .35733 .9392 .35782 .35751 .35723	
Macoun, Field, and al., 193 % n ₅₈₉₃	1	Brun, 1931	
% 5893 15° 18°	19°	% n _D % n _D	
39.50 1.36906 1.35842 39.60 .36910 .35844 39.70 .36914 .35847 39.80 .36917 .35849 40.00 .36925 .35851 40.00 .36925 .35854 40.10 .36929 .35856 40.20 .36933 .35858 40.30 .36937 .35861 40.40 .36941 .35863 40.50 .36945 .36865	.35814 .35817 .35819 .35822 .35824 .35827 .35829 .35832	20° 0.00 1.3330 47.28 1.3604 4.206 .3348 52.15 .3612 5.16 .3355 65.69 .3640 9.51 .3392 69.24 .3623 10.65 .3392 74.70 .3648 15.80 .3440 80.18 .3648 19.05 .3448 83.20 .3622 20.09 .3454 90.45 .3634 30.20 .3523 92.20 .3631 31.22 .3530 95.70 .3618 39.45 .3572 99.00 .3614 41.97 .3585 99.08 .3615	
39.50 1.35782 1.35754 39.60 .35784 .35756 39.70 .35786 .35758 39.80 .35789 .35761 39.90 .35791 .35763 40.10 .35795 .35766 40.20 .35796 .35776 40.30 .35801 .35777 40.50 .35805 .35777	.35728 .35730 .35732 .35734 .35736 .35738 .35740		

Scott, jr, 1946	Thwing, 1894
# n _D # n _D	% ε % ε
, д , д	15°
25° 99.73	0 75.50 55 39.93 5 72.30 60 36.31 10 67.95 65 34.60 15 65.36 70 33.66 20 61.79 72 33.86 25 60.21 75 30.30 30 59.55 80 28.15 32 55.20 85 26.58 35 50.52 90 25.71 40 48.40 95 25.27 46 48.40 99.8 25.02
90. 24 . 36156 41.50 . 35692 89. 83 . 36188 38.97 . 35610 88. 16 . 36200 35.25 . 35462 88. 03 . 36226 33.34 . 35374 86. 57 . 36226 30.59 . 35248	Fleming and Dewar, 1897
ll 86 52 36238 30 64 .35248	t & t &
84.80 .36260 27.22 .35057 84.42 .36260 25.13 .34935 83.27 .36267 23.75 .34852 81.47 .36276 22.94 .34798 80.82 .36282 20.83 .34657 80.57 .36289 20.84 .34660 79.78 .36292 19.66 .34590	39% -198.5 3.06 C -128.2 47.7 -145.0 36.6 L -125.2 51.2 -140.2 41.8 -122.0 54.1 -133.7 46.0 -117.3 56.7
78.85 .36295 17.86 .34495 77.62 .36292 14.25 .34199 77.34 .36298 10.46 .33936 76.76 .36289 9.39 .33858 76.63 .36292 8.97 .33825	Furth, 1923
75.59 .36292 6.56 .33658 74.21 .36289 4.80 .33549 73.64 .36289 4.83 .33546	vol% ε vol% ε
72.47 .36276 2.05 .33374 70.84 .36270 0.86 .33300 68.79 .36257 0.00 .33252	20° 0 80.5 60 46.5 20 68.5 80 35.5 40 57.7 100 26.0
Nernst, 1893	
ξ ε	Salazar, 1924 % & % &
20°	25°
99.8 25.6 98.7 26.6 93.0 28.4 81.1 34.3 57.1 44.2	0.000 81.12 60.041 51.23 4.999 78.53 64.966 47.79 10.014 76.63 70.000 45.78 15.016 73.81 70.020 45.93 20.011 72.14 74.906 44.56 25.018 69.49 75.045 44.06 30.018 68.05 79.734 42.01 33.893 66.53 80.013 41.45 40.037 63.30 84.512 39.94 44.967 60.58 84.991 39.29 45.149 60.11 89.907 38.10 49.986 56.85 93.489 36.63 50.061 55.85 95.097 35.04 50.501 57.29 99.166 33.55

Remesow and Tavaststjerna, 1930	Äkerlöf, 1932
	% E
20°	20° 40° 50° 60° 80°
0 80.5 60 46.4 10 74.2 80 36.2 20 68.6 100 26.0 40 58.0	0 80.37 73.12 69.85 66.62 60.58 10 74.60 67.86 64.33 61.49 55.70 20 68.66 62.41 59.22 56.40 50.81 30 62.63 56.73 53.79 51.04 45.88 40 56.49 51.03 48.36 45.80 40.93 50 50.38 45.30 42.92 40.66 36.51
Rock and Klosky, 1930	60 44.67 40.02 37.72 35.66 31.82 70 39.14 34.88 32.86 30.87 27.30 80 33.89 29.83 28.10 26.31 23.20 90 29.03 25.64 24.08 22.51 19.80 100 25.00 22.20 20.87 19.55
χ ε χ ε	
25° 0 81.12 25.299 64.58	Martin and Brown, 1938
8.378 75.56 34.864 57.86 15.497 70.66 41.076 53.69	mol% & 20° 25° 40° 55° 75°
Wyman, jr., 1931	90 26.66 25.53 23.60 21.41 19.20 80 28.60 27.70 25.25 23.00 20.61 70 31.13 30.23 27.45 24.99 22.28 60 34.23 33.35 30.20 27.46 24.53 50 38.20 37.15 34.00 30.90 27.50
β ε 40° 30° 25° 20° 10° 0 -5°	40 43.10 41.75 38.60 35.00 31.25 30 49.50 47.85 44.33 40.21 36.10
0 73.27 76.75 78.54 80.37 84.13 88.03 90.04 8.0 68.82 72.15 73.89 75.67 79.45 83.46 85.56 16.2 64.42 67.72 69.47 71.23 75.02 79.08 81.22 24.6 59.57 62.73 64.45 66.17 69.91 73.93 76.05	20 57.30 55.70 51.67 47.50 42.90 10 67.35 65.50 61.27 56.64 51.30 0 80.37 78.48 73.12 68.13 61.18
33.3 54.64 57.62 59.16 60.90 64.47 68.33 70.38 42.4 49.13 51.91 53.44 54.97 58.30 61.92 63.83 52.1 43.87 46.33 47.70 49.06 52.03 55.30 57.01 62.0 38.27 40.53 41.76 42.99 45.64 48.49 50.00	Pfeiffer, 1885
73.5 32.62 34.64 35.72 36.81 39.13 41.62 42.92 85.7 27.24 29.01 29.95 30.89 32.86 34.93 36.26 100.0 21.97 23.50 24.28 25.07 26.68 28.32 29.17	% τ.10 ⁴ × 0° 15°
Graffunder and Heymann, 1931	0 361 14070 21530 2.14 369 14370 22320 5.24 423 14490 23710 8.50 438 14250 23640 13.96 481 13650 23480 22.60 576 12100 22540
molβ ε molβ ε	26.52 569 11930 22090 31 19 613 11790 22630
25° 100	31.19 613 11790 22630 45.38 550 12860 23640 52.49 539 13910 25710 62.20 466 15910 26710 62.31 475 16190 27300 69.35 409 17740 28620 73.12 395 18260 29070 77.09 341 19970 30180 83.37 286 21240 30360 87.59 276 20880 29540 91.78 261 20440 28430 95.94 233 20340 27450 99.28 198 19760 25630

Perkin, 1891			.~	
	l	ns and Evans, 192		
$50 \text{ mol}\% \qquad 19.4^{\circ} \qquad (\alpha)_{\text{magn.}} = 0.9219$	%	t Ver 2753 /	det's cons	
		2733 1	3300	, <u>A</u>
Schönrock, 1895	0 10 20 30 40 50	12.2 0.0812 12.3 .0793 12.3 .0765 13.4 .0756 11.9 .0751 12.3 .0749 12.3 .0752	.04 .04 .04 .04 .04	65 63 61 59 60
34.923% 17.2° (x) _{magn} = 1.0340	60 70 80	12.3 .0752 13.0 .0747 12.5 .0724	.04	56 37
Thouvenot , 1910	90 94.4 96.7 99.4	12.5 .0747 12.5 .0724 12.5 .0695 12.5 .0682 11.8 .0673 12.5 .0670	.04	05
% (α) _{magn} . % (α) _{magn} .				
25°	 Mikhaile	ov. 1940		
0 4.815 50.33 4.597 7.542 .796 62.76 .477 14.94 .762 69.54 .432	vol%	sound velocity (m/sec.)	vol%	sound velocity (m/sec.)
20.43 .740 79.50 .332 30.04 .729 38.98 .256	0	1472 at roo	n temp.	1513
41.59 .659 100 ·095	15 30	1574	75 90	1403
	45	1630 1597	100	1298 1225
Scharf, 1932	Jacobs	ón, 1951		
vo1 % α ^{5893 Å} vol % α ^{5893 Å}	vo1%	sound velocity	vol%	sound velocity
magn. magn.		(m/sec.)	,	(m/sec.)
16°		-20°		
0 2.146 59.57 2.051 9.94 .128 69.49 2.013 19.88 .122 79.40 1.980 29.81 .120 39.30 .936 39.73 .103 99.21 .866 49.66 .076 100.00 .854	0 9.9 19.3 31.3 39.1 48.7	1486.1 1549.1 1604.6 1629.8 1602.5 1547.0	58,9 68.6 79.1 89.6 100.0	1478.8 1417.5 1339.9 1270.3 1168.2
Ranganadham, 1931				
f (α) _{magn} f (α) _{magn} .				
at room temp.				
0 0.7200 56.94 0.7408 30.00 .7331 67.40 .7440 40.63 .7375 83.40 .7435 46.30 .7427 100.00 .7430				

Heat constants.	
negt constants,	Schuller, 1371
Bussy and Buignet, 1857	% U % U
% U	at room temp.
0 18.5° 1	
46 0.9047 100 0.5790	14.90 1.0391 54.09 .8826
	1 22.56 .0436 58.17 .8590 I
	23.56 .0354 73.90 .7771 35.22 .0076 83.00 .7168 44.35 0.9610 100 .6120
	44.35 0.9610 100 .6120 49.46 0.9162
Schnidaritsch, 1859	
vol% U vol% U	
at room temp. 0 1.0011 60 0.8456 10 0.9897 70 .8198	Winkelmann, 1873 and 1907
10 0.9897 70 .8198 20 .9829 80 .7784 30 .9732 90 .7178	% U temp. limit U temp. limit
40 .9482 100 .6219 50 .9230	10 1.0350 8.4 - 32.9 1.0235 23.8 - 32.9
	20 .0543 12.1 - 36.0 .0482 26.7 - 36.0
	40 0.9898 14.4 - 36.2 .0015 25.5 - 36.2 50 .9272 12.7 - 34.6 0.9397 24.6 - 34.6
Jamin and Amaury, 1870	60 .8683 11.7 - 34.4 .8837 23.9 - 34.4 70 .8042 10.7 - 33.1 .8240 22.4 - 33.1 80 .7413 8.4 - 32.0 .7529 21.4 - 32.0
t U t U	30 .0350 14.0 2.36.1 .0434 27.9 2.36.2 40 0.9898 14.4 2.36.2 .0015 25.5 2.36.2 50 .9272 12.7 2.4.6 0.9397 24.6 2.34.6 60 .8683 11.7 2.34.4 .8837 23.9 2.34.4 70 .8042 10.7 2.33.1 .8240 22.4 2.33.1 80 .7413 8.4 2.20 .7529 21.4 232.0 90 .6750 6.3 2.30.3 .6837 18.8 2.30.3
100% 34%	20.00 000 0000 10000 10000
24 00 222 12 25 282	7.044.000000 1991
32.55 .685 24.57 .106	Zetterman, 1881 4 U % U
36.15 .692 27.45 .110 39.52 .702 30.25 .117	
	20°
]· 39.57 .143	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	20 1.043 50 0.878
84% 17%	
18,52 0.744 14,70 1.089 22.35 .757 17.27 .093 25.87 .780 19.67 .092	Dimension 1995
25.87 .780	Blumcke, 1885
l 35.75 .822 27.60 .099 l	% U 0-15° 0-30° 0-45° 0-54° 0-98°
37.02 .823 32.45 .112	
40.00 .832 42.75 .841	1.4 1.034 1.019 - 1.020 -
45,60 .848	5.5 1.066 1.037 - 1.042 - 1.089
% U % U	14.9 1.116 1.069 - 1.071 - 1.0
0.	24.8 1.054 - 1.086
0 1.000 50 0.940	29.6 1.057 1.036 1.036 1.042 -
8.4 .060 67 .840 17 .065 84 .720	78.6 .717 .718 .725 .758 .792
25 .055 100 .880 34 .030	99.3 .569 .579 .595 .630 .683

Ilges, 188	5			Blacet, Leighton and Bartlett, 1931
l ————	<u> </u>	%		t
* * * * * * * * * * * * * * * * * * *				95% 75% 50% 25%
0 14.90 20.00 22.56 28.56 35.22 44.35 49.46	at roo 1 1.0391 1.0456 1.0436 1.0354 1.0076 0.9610 0.9162	49.93 54.09 54.45 58.17 73.90 83.00 100.00	0.9096 0.8826 0.8793 0.8590 0.7771 0.7168 0.6134	30 0.668 0.796 0.919 1.051 35 .683 .815 .925 .053 40 .698 .834 .946 .055 45 .716 .855 .955 .060 50 .734 .878 .964 .062 55 .753 .893 .975 .065 60 .771 .904 .983 .066 65 .792 .918 .995 .066 70 .828 .943 1.008 .074 75 - 1.013 .074
Magie, 1901				
mol %	U	mol %	U	- 1975
	at room	······································		Bussy and Buignet, 1867
7.41 1.96 0.99	1.0509 1.0194 1.0074	0.50 0.33	1,0026 1,0009	1+1 t:22° Dt:+7.30 29.87% t:15.1° Dt:+9.10
Bose, 1907				Winkelmann 1972 and 1007
×		U		Winkelmann, 1873 and 1907
	0.5°-5°	20.1°-26°	39°-42.5°	% Q mix % Q mix % Q mix (cal/g) (cal/g) (cal/g)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95	1.005 1.026 1.042 1.045 1.037 1.019 0.998 0.971 0.934 0.896 0.863 0.832 0.772 0.741 0.710 0.679 0.648 0.615 0.582	0.999 1.007 1.017 1.025 1.028 1.023 1.009 0.992 0.971 0.945 0.917 0.886 0.855 0.822 0.788 0.756 0.723 0.693 0.660 0.623 0.579	0.999 1.012 1.022 1.027 1.028 1.024 1.014 0.999 0.952 0.917 0.886 0.859 0.836 0.814 0.789 0.760 0.769 0.696 0.660 0.609	Ccal/g)
Doroshevski	i and Rakovski	i, 1908		
%	U	%	U	Clarke, 1905
	22°-99		0.0204	% Q mix % Q mix (cal/g) (cal/g)
0.00 5.02 10.04 15.00 20.09 24.97 29.94 34.98 39.93 44.95 50.00	1.0067 1.0169 1.0300 1.0422 1.0440 1.0411 1.0277 1.0116 0.9924 0.9702 0.9489	54, 93 59, 95 64, 96 69, 96 74, 99 80, 00 85, 05 90, 02 94, 43 100, 00	0.9296 0.9079 0.8859 0.8603 0.8309 0.7732 0.7390 0.7089 0.6597	(cal/g) (cal/g) 20.4 2.80 84.9 2.29 25.0 3.53 84.2 2.39 43.4 5.06 86.0 2.10 67.8 4.12

	cal/g mixture
Bose, 1907	11.85 7.67 6.02 3.82 1.22
% Q mix	22.12 10.97 8.84 5.27 - 31.09 12.64 9.33 5.32 -
0° 17.33° 42.05° 74.0°	38.98 10.99 8.64 4.81 - 46.00 9.17 7.52 4.05 -
cal/mole mixture	52.27 8.24 6.70 3.28 - 57.92 7.16 5.76 2.63 -
5 148.6 116.7 74.0 24.3 10 237.5 186.8 109.8 -59.1 15 265.9 208.3 117.6 -55.5 20 258.0 204.2 112.7 -49.0 25 238.0 192.0 101.4 -40.6 30 219.5 178.2 86.5 -29.4 35 200.4 161.1 73.0 -16.1 40 181.0 144.1 60.8 - 45 163.0 128.6 50.2 - 50 147.1 113.7 40.4 - 55 132.1 101.3 31.8 - 60 110.2 89.9 23.7 - 65 109.1 79.7 17.4 - 70 98.3 70.4 12.4 - 75 87.1 61.0 8.2 - 85 61.1 40.2 2.9 - 90 45.4 23.1 1.3 - 95 26.8 <td>63.12 6.20 4.90 2.07 - 67.65 5.37 4.19 1.65 - 71.88 4.60 3.54 1.262 - 75.75 3.96 3.03 0.955 - 79,31 3.45 2.59 .700 - 82.60 3.00 2.20 .493 - 85.64 2.60 1.88 .327 -1.60 88.46 2.23 1.56 .211 -1.436 91.09 1.85 1.260 .118 -1.235 93.54 1.460 0.954 .065 -1.004 95.83 1.025 0.644 .028 -0.717 97.98 0.543 0.315 .0067 -0.381</td>	63.12 6.20 4.90 2.07 - 67.65 5.37 4.19 1.65 - 71.88 4.60 3.54 1.262 - 75.75 3.96 3.03 0.955 - 79,31 3.45 2.59 .700 - 82.60 3.00 2.20 .493 - 85.64 2.60 1.88 .327 -1.60 88.46 2.23 1.56 .211 -1.436 91.09 1.85 1.260 .118 -1.235 93.54 1.460 0.954 .065 -1.004 95.83 1.025 0.644 .028 -0.717 97.98 0.543 0.315 .0067 -0.381
95 26.8 14.7 0.4 - cal/mole alcohol	Bosnjakovic and Grumbt, 1931
5 21 10 0.7 18 10 43 22 1.5 33 15 69 40 3.0 46	total heat content i (cal/g) (0° - b.t.)
20 98 60 5.5 60 25 119 80 10 74 30 141 101 18 85	% ·b.t. i b.t. i b.t. i
35 165 124 26 -	1.0 atm. 1.25 atm. 1.5 atm.
40 197 152 40 - 45 240 181 58 - 50 299 226 82 - 55 364 287 111 - 60 454 360 155 - 65 570 460 203 - 70 726 592 289 - 75 949 769 404 - 80 1297 1020 563 - 85 1770 1391 784 - 90 2355 1864 1082 - 95 2996 2346 1490 500 100 3408 2643 1672 840	0 99.1 99.1 105.4 105.5 110.8 110.9 5 94.3 92.5 99.2 97.3 105.3 104.0 10 90.5 87.2 96.3 93.0 101.4 98.4 15 87.8 82.9 93.6 88.8 98.7 94.2 20 86.0 79.5 91.6 85.4 96.8 90.8 25 84.7 76.7 90.2 82.7 95.5 88.2 30 83.6 74.4 89.0 80.4 94.4 86.0 40 82.0 70.9 87.8 76.9 92.7 82.4 50 80.9 67.9 86.5 73.7 91.8 79.2 60 79.9 64.9 85.4 70.3 90.6 75.4 70 79.0 61.6 84.4 66.6 89.7 71.7 80 78.2 57.8 83.9 62.5 88.7 66.1
cal/mole water 5 157 123 73 25	100 77.8 49.1 83.0 53.0 87.7 56.5
10 254 207 122 - 15 314 244 139 -	
20 324 255 142 - 25 316 256 135 -	% b.t. i b.t. i
30 311 253 124 - 35 307 247 113 -	% b.t. i b.t. i 1.75 atm, 2.0 atm,
40 303 239 101 -	
45 299 233 92 - 50 295 227 81 - 55 294 225 71 - 60 300 225 61 - 65 311 228 51 - 70 327 236 41 -200 75 349 245 33 -225 80 375 255 25 -250 85 407 266 18 -280 90 443 278 12 -310 95 484 291 6 -340 100 530 305 0 -370	0 115.4 115.6 119.6 119.9 5 110.1 108.6 113.8 112.6 110.1 108.6 113.8 112.6 110.1 106.0 101.9 109.5 107.1 15 103.1 98.6 106.9 102.8 20 101.0 95.1 105.0 99.4 25 99.5 92.4 103.5 96.6 30 98.4 90.3 102.5 94.4 40 97.0 86.7 100.8 90.8 50 95.7 83.2 99.7 87.3 60 94.6 79.2 98.6 83.0 70 93.6 74.6 97.5 78.2 880 92.7 69.7 96.6 72.8 90 91.8 64.4 95.7 67.5 100 91.8 59.8 95.7 62.9
	70.7 02.7

Bost	viakovic	and Gru	mbi, 193	1			Raikow,	1899 and 1902		
(7,7,31	ijakorie	ano cru	moe, 270	-			vo1%	flashing point	vol%	flashing point
total heat content i (cal/g)						710-713mm				
(0° - t°)						100	12	27.75		
7	0	10	20	30	40	50	98 96	13.25 14	30 25	29.50 33.25
0	0	+10	+20	+30	+40	+50	94 92	15 15.75	25 20 15 14 13 12 11	36.75 41.75
5 10	-3.7 -6.6	$\frac{6.5}{3.5}$	$\substack{16.6\\13.8}$	26.8 24.1	$\frac{37.1}{34.5}$	47.3 44.9	90 85	16.50 17.75	14 13	43 44.25 45. 7 5
15 20	-9.1 -10.7	$^{1.2}_{-0.5}$	11.6	22.0	34.5 32.5 30.8	43. 0 41.4	80 75	19 19.75	12 11	45.75 47
25 30	-11.6 -12.1	-1.5 -2.0	9.9 8.8 8.2	20.3 19.1 18.4	70 0	40.2 39.2	75 70 65	21 21,25	10 9	49 50.25
35 40	-11.6 -10.8	-1.9 -1.5	8.0 8.1	$\begin{array}{c} 18.1 \\ 18.0 \end{array}$	28.8 28.2 27.9 27.5 27.1 26.6	38.5 38.0	60 55	22.25 23	9 8 7 6	52.50 55
50	-8.7	0.0 +1.4	8.9	18.1	27.5 27.1	37.1 36.4	51.9 50	23.75 24	6 5	58.26 62
60 70	-6.7 -5.0 -3.4	2.5 3.4	9.8 10.2	18.3 18.2 17.8	26.6	35.8	45 40	24.75 26.25	4	68
80 90	-3.4 -2.0 0	4.3	$10.4 \\ 10.7 \\ 11.2$	17.4 17.1	25.8 24.6	35.8 34.7 32.3 29.8	10	20.20		
100	0	5.5	11.2	17.1	23.4	29.8				
×	60	70	80	90	100	~~~~~	li	and Schtarbanow		
0	+60	+70	+80		+100			flashing point	vol%	flashing point
10	57.6 55.4 53.6	67.8 65.8 64.1	78.0 76.2 74.5	88.2 86.6	98.4 96.9		į		l1 mm	
15 20	52.2	62.5	73.0	85.0 83.6	95.4 94.1		15 14.5	41.75 42.25	9 8.5	50.5 52
25 30	50.8 49.7	61.3 60.1 59.1	71.8 70.6	82.4 81.3	92.9 91.9		14 13.5	43 43.75	8 7.5	53 53.75
35 40	48.8 48.1	$\begin{array}{c} 59.1 \\ 58.3 \end{array}$	69.6 68.7	80.3 79.4	90.9 90.0		13 12,5	44 45	7 6.5	55.50 56.75
50 60	46.9 45.8	56.7	66.9 65.0	79.4 77.4 74.8	87.6 84.3		12 11.5	47.75 46.50	6	58.28
70 80	45.0 43.4	55.4 53.8 51.5	62.6 59.2	714	80.2 75.5		11 10,5	47 48	5.5 5 4	60 62 68
90 100	40.1 36.5	47.6 43.4	55.2 50.7	67.4 63.0 58.4	70.8 66.4		10	49 49.50	7	08
100	30.3	40,4	50,,				/			
=====										
Hen	neberg,	1389					ł			
%	t	thermal	%	t	therm	al	Į.			
		conduct	ivity			ctivity				
0	11.52	22.19	60	13.3	4 10	.63				
10 20	11.94 12.36	19.99 17.81	70 80	14.1 14.4	19	.60 .29				
30 40	12.94 12.90	16.16 14.11	90	15.0. 14.2	3 7	.11 .68				
50	12.93	12.17			0	.00				
1							[
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WATER + PROPYL ALCOHOL

								!	
LXII. WATI	ER + OTHER ALCO	HOLS .		Sore	Sorel, 1900				
Water + Pr	ropyl alcohol (C H.O.)		L	% V	L	% V		
		-			at b.t.	760mm			
Heterogene	eous equilibria	•		2 5	30.2 47	50 55	68.7 69.1	•	
Konovalov,	1887			10 15	55.3 61.1	60 65	69.5 69.6		
t	р	t	p	20 25	64.5 65.7	70 75.75	$\frac{70.1}{72.2}$		
17,65	6.2 20.8		224 1	30 35 40	66.6 67.3 67.7	80 85 90	75.4 75.6 84.1		
40.30 51.00	79.4 138.7	69.35 80.85 88.50	334.1 540.3 740.4	45	68.2	95	90.8		
59.80	214.2		740.4		_=_				
16.25 32.60	19.0 51.2	61.40	235.1						
42.90	91.2 149.0	70.55 80.75 88.60	357.2 547.5 747.0	Kuene	n and Rob	son, 1902			
52.10 51.45	144.2		747.0	T t		P	t	P	
16.25	.19.2	60.50	231.50			100 9	ß.		
33.00 42.35 50.65	54.6 91.8 141.75	70.90 80.30	368.80 546.0	98	.0 3.45	$\frac{0.96}{1.06}$	166.9 183,3	8.47 12.20	
50,05		88.00	745.3	105	3.3	1.37 2.97	228.3 242.1	28.71 36.35	
19.65	52.8 24. 5	60.95	237.5	131 149 160	.9	3.23 5.63 7.21	248.2 250.6 264.0	39.76 41.36	
32.35 40.15	52.9 82.6	71.40 81.40	382.8 579.8	100		97.5		51.51	
51.55	149.8 62.:	87,70 27 %	749.9	98	.15 3.0	$\substack{1.04\\1.17}$	183.1 216.8 227.8	13.35 25.12	
19.4 33.0	25.1 56.8	60.50 71.43	234.8 384.1	116	.05	1.52 2.25	245.1	30.61 40.14	
42.7 51.05	94.8 148.7	78.40 87.60	586.0 749.0	130 145 160	i.4	3.54 5.57 7.99	254.6 264.9	42.42 55.94	
10.4	88.	•	205 5		• •	75 9	8		
19.4 32.55 42.2	19.4 42.7 74.1	70.85 80.65 89.4	295.5 455.8 649.6	166 179	9).1	11.20 14.56	241.35 250.2	47.98 56.2	
51.2 61.35	119.2 195.0	90.55	751.2	179 182 215	.7 .7	15.76 30.57	261.8 275.85	67.33 83.81	
	100	•		224	.0	35,85 75 % (2 nd	series)		
16.5 52.4 59.9	10.9 101.1 148.5	70.5 82.1	247.7 411.4	II 87	.6	$0.91 \\ 1.00$	105.1 116.8	1.89 2.81	
	140.5			92 99	.15	$\substack{1.17\\1.26}$	123.65	3.50	
t	i.	% L	v	===					
31	.5	6.2	51.10						
40 51).3 .0	-	53.03 57.01						
32	2.6	21.8	59.03 66.40						
52	2.9 2.1 2.55	- 88.8	69.1 71.5					f	
42 51	2.55 2.2 2	-	76.5 77.9 78.9						
				:					
<u> </u>				11					

%		p	p	2	Р,
L	v				
		30.35°			
24.01 38.43 68.08 68.31 69.98 80.65 100.00	64.85 65.76 68.31 68.08 68.55 70.72	45.6 47.0 47.0 47.0 47.0 28.5 49.92°	16. 17. 18. 18. 18. 19. 28.	2 5 3 0 8	29.3 29.3 28.5 28.7 28.4 27.2
24.88 38.79 59.36 69.51 69.98 75.34 80.65 90.42 93.83 100.00	65.27 66.44 68.32 69.75 69.73 70.72 71.95 78.95 83.01 100.00	136.4 138.7 139.1 139.7 140.4 138.9 138.4 129.3 121.3	49 51 54 57 57 58 60 68 72 90	.6 .1 .4 .4 .2 .4	87.2 87.0 84.5 82.6 83.0 80.5 78.2 60.9
24.51 38.50 59.15 69.98 70.49 70.72 75.34 80.65 90.42 93.83 100.00	65.27 65.85 68.79 70.49 70.49 71.48 73.52 80.38 84.52	65.94 292.7 296.1 299.2 301.0 300.6 300.6 300.0 297.4 277.8 261.8 79.80	105 108 119 125 125 128 135 153	.5 .1 .7 .5 .5 .7 .1	187.2 187.6 180.1 175.3 175.1 175.1 171.3 162.3 124.7 99.0
23.79 38.09 58.96 69.98 70.72 71.46 75.34 80.65 90.42 93.83 100.00	64.65 66.23 69.50 70.72 71.00 71.46 72.24 74.28 81.49 85.71 100.00	530.0 539.6 547.0 548.1 548.5 549.7 545.7 541.7 506.6 479.3 374.6	187 199 222 230 232 235 238 251 288 309 374	.9 .1 .3 .0 .7 .8 .4 .1	342.3 339.7 324.9 317.8 316.5 314.0 306.9 290.3 218.4 171.2
Gadwa,	1936				
mol L	% V	b.t.	· L	01% V	b.t.
	· · · · · ·	760m			
0.0 1.0 2.0 4.0 6.0 10.0 20.0 30.0	0.0 11.0 21.6 32.0 35.1 37.2 39.2 40.4	100.0 95.0 92.0 90.5 89.3 88.5 88.1 87.9	43.2 50.0 60.0 70.0 80.0 85.0 90.0 96.0	43.2 45.2 49.2 55.1 64.1 70.4 77.8	2 87.9 2 88.3 1 89.0 1 90.5 4 91.5

Fowle	r and Hur	ıt, 1941						
 %	 }	ب الله ليد بهم نهم نهم هم هي شي د	8					
L	V	L	V		رحمارحين عبير ميرجين مين عبد سير بر			
25°								
1.1 4.3 9.0 9.7 9.8 12.8 14.4 19.8 20.6 24.2 28.8 29.3 30.3	19.9 44.0 56.8 58.7 58.6 63.4 65.1 66.5 65.1 66.6	38.4 40.6 40.6 45.4 47.5 48.3 65.0 68.0 69.0 71.3 79.9 84.9 91.4	67.3 67.2 68.0 66.0 68.0 70.0 69.9 70.2 71.0 75.2 77.1 83.4					
	Butler, Thomson and Maclennan, 1933							
mol%	wt%	p2	$\mathbf{p_1}$					
	2	5°						
1.00 2.00 5.00 10.00 20.00 40.00 60.00 30.00 90.00 95.00	27.6 41.7 60.8 65.9 67.4 68.5 72.1 81.6 88.8 94.3 100.0	2.68 5.05 10.80 13.20 13.60 14.20 15.20 17.80 19.40 20.80 21.76	23.4 23.5 23.2 22.7 21.8 21.7 19.9 18.4 8.3 4.2 0.0					
Doros	Doroshevski and Polyanski, 1910							
%	700mm	dt/dp	b.t. 760mm	dt/dp	80 Omm			
0 9.92 19.99 29.99 40.04 49.96 59.98 69.91 80.02 90.02	97.72 89.22 86.80 86.22 85.99 85.82 85.70 85.60 85.81 87.20 95.09	0.0380 .0362 .0362 .0360 .0360 .0358 .0360 .0360 .0363 .0362	100.00 91.39 88.98 88.38 88.17 87.98 87.98 87.97 89.38 97.26	0.0360 .0350 .0342 .0345 .0340 .0340 .0340 .0340 .0340 .0342	101.44 92.79 90.35 89.76 89.53 89.34 89.21 89.12 89.33 90.74 98.63			

	2 nd series
Ryland, 1899 Az. b.t. 87-87.5 (770 mm) 72%	31.878 - 9.564 71.377 -13.475 37.378 -10.012 72.871 -13.914 39.489 -10.151 74.904 -14.371 39.851 -10.090 76.542 -15.343 42.181 -10.284 77.786 -16.131 44.724 -10.469 79.896 -17.54
Young and Fortey, 1901	48.146 -10.735 81.402 -18.80 49.534 -10.771 82.426 -20.15 52.701 -11.022 83.684 -20.85 54.745 -11.189 85.040 -23.10 57.210 -11.374 86.426 -25.05 59.875 -11.569 87.985 -28.00 62.841 -11.855 88.737 -31.10 64.419 -12.084 89.643 -33.10 66.415 -12.430 90.340 -34.65 68.241 -12.637 90.866 -38.50 70.011 -12.956 91.980 -41.30
	3 nd series
Wrewski, 1910 Az b.t. % 97.19 71.69 79.80 71.40 65.94 70.50 49.92 69.80 30.35 68.20 Fowler and Hunt, 1941 Az. b.t. 70.9% 87.76°	2.027 - 0.610 62.841 -11.56 3.974 - 1.199 64.670 -11.91 5.867 - 1.856 65.159 -11.95 7.915 - 2.591 67.418 -12.28 10.025 - 3.250 67.941 -12.40 11.917 - 3.993 69.025 -12.30 13.968 - 4.769 69.526 -12.43 15.925 - 5.562 70.481 -12.83 17.902 - 6.641 71.377 -13.05 19.892 - 7.513 73.583 -13.65 21.884 - 8.078 74.949 -14.30 23.871 - 8.550 76.542 -14.59 25.935 - 8.816 78.727 -15.83 27.891 - 9.098 80.689 -17.06 29.667 - 9.175 82.380 -19.1 29.902 - 9.202 84.140 -20.6 31.874 - 9.459 85.650 -23.5 33.885 - 9.623 86.853 -25.3 34.437 - 9.652 87.985 -27.4 38.401 - 9.817 89.313 -30.7 42.269 -10.043 89.953 -32.3 47.423 -10.466 91.398 -37.4 54.416 -10.85 91.916 -42.5 57.016 -11.024 92.719 -47.5
Pickering, 1893 # f.t. # f.t.	Abegg, 1894
1 st series	M f.t.
1.257 - 0.37 52.701 - 11.20 2.408 - 0.73 57.210 - 11.58 3.753 - 1.18 62.841 - 12.07 4.918 - 1.51 67.681 - 12.66 6.336 - 2.00 72.919 - 13.77 8.718 - 2.82 74.949 - 14.92 11.917 - 3.98 77.786 - 16.50 15.187 - 5.35 79.916 - 18.36 18.276 - 6.75 81.402 - 19.7 21.297 - 7.87 83.648 - 22.1 24.147 - 8.66 85.040 - 24.2 26.675 - 9.13 86.426 - 26.5 29.667 - 9.60 87.121 - 28.0 34.777 - 9.98 88.625 - 31.9 39.489 -10.32 91.007 - 40.5 42.269 -10.54 91.916 - 44.5	1.007 - 1.953 2.015 - 4.263 3.022 - 7.143 4.029 - 9.698 4.407 -10.120 5.037 -10.608

Jones, 1904. Jones and Getman, 1904	Pagliani and Battelli, 1884
M f.t. M f.t.	% d % d
0.5 -0.890 3.0 -7.100 1.0 -1.900 4.0 -8.820 2.0 -4.160 5.0 -9.450	0° 10.00 0.9878 45.45 0.9290 18.18 .9805 52.63 .9174 25.00 .9707 62.50 .8974 35.71 .9511 76.92 .8691
	35.71 .9511 76.92 .8691 40.00 .9425 100.00 .8203
Ross, 1954	
% f.t. % f.t.	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Turbaba, 1893
20 -7.8 60 -11.8 30 -10.1 70 -13.7	% d
	0° 15° 30°
Lemonde, 1936	1 0.99820 0.99740 0.99403 2 .99668 .99597 .99242 2.97 .99527 .99442 .99084 4.01 .99386 .99289 .98925
vol% D vol% D	5 .99263 .99154 .98775
11°	15.01 .98330 .97925 .97301
1.2 0.77 59 0.08	19.94 .97898 .97242 .96440 25.46 .97085 .96238 .95326
6 .67 7 9 .15	30.09 .96256 .95031 .94371 41.04 .94102 .93093 .92044
23.5 .33 98 .47	50.84 .92158
45 .11	69.06 .88530 .87378 .86192
	81.06 .86131 .84945 .83715 90.11 .84271 .83062 .81831
	94.85 .83234 .82027 .80802 98.94 .82237 .81053 .79838
Hansen and Miller, 1954 (fig.)	100.00 .81944 .80772 .79577
mol% lg activity mol% lg activity coeff.	
3 1.05 50 0.09 10 0.80 60 .05 20 .50 70 03	Young and Fortey, 1901
30 .32 80 .02	\$ d
40 .15 95 .00	0°
	71.69 0.88004 74.93 .87365
Properties of phases.	74, 93 87365 79, 96 86360 84, 87 85362 89, 97 84307 94, 97 83203
Pagliani, 1880-1	100.00 .81923
% d % d	
0°	
0 0.9999 52.63 0.9174	
10.00 .9878 62.50 .8974 18.18 .9805 76.92 .8691	
25.00 .9707 86.92 .8502 35.71 .9511 100.00 .8190 40.00 .9425	

Rudorf, 1903	Dore	shevski, 19	009 and	1910		
% d % d	- %	d	%	d		
25°		1	5°			
0 0.997 8.22 0.982 2.03 .992 16.67 .968 4.08 .988 34.33 .940	2.02 5.03 14.99 19.97 24.98 34.98 35.01	.94310	50. 54. 69. 75. 79.	07 .9 96 .9 96 .8 00 .8 98 .8	2266 1221 0220 7166 6148 5128	
Jones, 1904 , Jones and Getman, 1904	0 9.92	0.99913 .98514	59. 69.		9185 7167	
M d M d	19.99 2 9.98	.97202 .95321	80. 90.	02 .8 02 .8	5122 3047	
0°	40.04 49.96	.93268 .91231		.8	0733	
0 0.999868 4.0 0.957576 0.5 .993392 5.0 .943840						
1.0 .986760 6.0 .929644 2.0 .979080 7.0 .913488					_	
3,0 .969912	li ———	shevski and				
	%	d	<u> </u>	d 15°	%	d
Clarke, 1905	01 12 34 45 67 89 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 27 28 29 30 31 32 33	0.99913 .99745 .99580 .99430 .99284 .99142 .99005 .98874 .98626 .98507 .98390 .98274 .98157 .98038 .97915 .977683 .97653 .97509 .97358 .97509 .96310 .96414 .96685 .96500 .96310 .96114 .95917 .95718 .95518 .95518 .95518 .94918	34 35 36 37 38 39 40 41 42 43 44 45 51 55 55 55 57 58 60 61 62 63 64 65 66 67	0.94514 .94312 .94109 .93907 .93703 .93498 .93291 .93083 .92876 .92464 .92258 .92053 .91644 .91439 .91235 .91029 .90824 .906415 .90210 .90004 .89799 .89594 .89594 .89799 .895854 .88778 .88576 .883773 .885765	68 69 70 71 72 73 74 75 76 77 78 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	0.87563 .87360 .87158 .86956 .86755 .86553 .86351 .86148 .85944 .85739 .85533 .85126 .84716 .84511 .84307 .84102 .83896 .83478 .83266 .83151 .82836 .82399 .82179 .81959 .81730 .81490 .81959 .81730 .81490 .80982 .80733

Atkins and Wallace, 1913			
t d t d	Brun, 1931		
77.44% 100%	%		d
0.0 0.87001 0.0 0.82135 13.5 .85974 13.4 .81086 24.2 .85102 47.3 .78484 43.7 .83468	0.00 10.69 23.16	.9964 .9666	8 .98273 8 .96362
Frankforter and Frary, 1913	33.81 51.28 66.02 79.01 93.10 100.00	.9456 .9206 .8935 .8865	9 .90680 50 .87228 27 .84645 04 .81818
% d % d			
20° 86.77 0.83211 96.21 0.81175 90.15 .82497 97.997 .80753 92.27 .82044 98.065 .80568 94.28 .81600 100.00 .80237	Gonzales an	d Salazar, 1932	
	2	5° 30°	35°
Mathews and Cooke, 1914	4.983 4.990 9.982 14.975	99707 0.99567 98946 .98792 98912 .98758 98261 .98081 97571 .97349 97306 .96950	98581 97886
50%	19.936	96758 .96483	.96195
0 0.98853 25 .9058 40 .8946 55 .8829 70 .8700	29.938 32.214 34.994 35.644 39.849 44.997 45.352 49.928	94449 94296 93967 93715 93377 93575 93232 92696 92350 91582 91220 91584 91191 905555 90151 90151	.94112 .93622 .93028 .92882 .91986 .90816 .89770 .89770
Springer and Roth, 1930	54.824 · 54.898 ·	90013 .89637 89535 .89637 89524 .89141 88628	.88747 .88233
g d g d	59.894	89011 .88628 88192 .88102 88479 .88102	. 87697
25° 0.0 1.0029 64.94 0.8765 22.61 0.9625 69.40 .8695 52.90 0.8810 100.00 .8007	62.409 64.883 64.922 69.820 69.849 74.737 76.816 79.898	87963 .67571 87458 .87063 87447 .87063 86445 .87063 85443 .86037 85426 .86037 85410 .85002 85013 .84608 84377 .83961	. 86674 . 86674 . 86674 . 85620 . 85620 . 84581 . 84185 . 83535 . 83535 . 83535
Dunstan and Thole, 1930	84.407 84.876	83445 .83961 83354 .82937	.82502 .82502
% d 20° 25° 30°	86.724 89.690 90.020	32975 .82561 32551 .81939 32252 .81939 31305 .80893	.82136 .81510 .81510 .80470
0.00 0.9983 0.9972 0.9958 17.40 .9746 .9723 .9699 28.62 .9536 .9494 .9476 59.38 .8918 .8867 .8831 73.13 .8623 .8584 .8543 100.00 .8057 .8011 .7970		.79691	.79268

Harms, 1938	Jacobson, 1951
mol% d mol% d	vol% π vol% π
15° 0.000 0.999126 41.173 0.85126 .608 .99580 54.542 .84101 .919 .99430 62.960 .83051 1.554 .99141 72.454 .82179 2.881 .98626 87.804 .81730 5.027 .97914 90.653 .81490 6.976 .95318 93.630 .81240 11.391 .91234 96.742 .80982 23.075 .89184 100.000 .80733 31.031 .87158	0 45.37 58.8 55.40 9.6 41.77 69.5 60.59 19.3 40.19 79.2 65.67 29.3 43.18 88.6 71.90 39.0 47.00 100.0 82.83 49.0 51.29
	Mc Hutchinson, 1926
Fowler and Hunt, 1941	N maximum density temperature 1 1.50 0.5 3.30 0.25 3.80
% d % d	0.25 3.80 0.125 4.15 0.0625 4.10
25° 0 0.998 70 0.862 10 0.981 77 0.85 15 0.975 80 0.842 25 0.96 90 0.824 35 0.938 98 0.803 50 0.905 99 0.8025 60 0.884 100 0.80	Viscosity Pagliani and Battelli, 1884
Jacobson, 1951	Я п Я п 0° 10° 0° 10°
vol% d vol% d	0 1775 1309 45.45 7890 4764
20° 0 0.9982 58.8 0.9014 9.6 .9863 69.5 .8791 19.3 .9748 79.2 .8580 29.3 .9593 88.6 .8335 39.0 .9411 100.0 .8045	10.00 3354 2185 52.63 7657 4812 18.18 5014 3046 62.50 7374 4633 25.00 6115 3527 76.92 6001 4091 35.71 7533 4435 100.00 4170 3119 40.00 7789 4621
39.0 .9411 100.0 .8045 49.0 .9214	% η % η 0° 10° 0° 10°
Anissimov, 1953 # d	0 1775 1309 45.45 7889 4762 10.00 3352 2182 52.63 7656 4810 18.18 5012 3044 62.50 7373 4631 25.00 6113 3525 76.92 6000 4089 35.71 7532 4433 100.00 4168 3134 40.00 7788 4619 (second series)
0 0.9991 60 0.8922 10 .9852 70 .8719 20 .9723 80 .8516 30 .9535 90 .8308 40 .9331 100 .8077 50 .9124	

Rudorf, 1903	Laamanen, 1922
	% a ² % <u>a² </u>
7 (water=1)	18°
2.03 1.031 4.09 .188 8.25 .707 16.72 .912 34.43 2.995	2 10.54 50 5.80 5 8.87 60 5.90 10 7.26 70 6.00 20 5.85 80 6.11 30 5.58 90 6.70 40 5.67 100 6.06
Dunstan, 1904-5	Brun, 1931
% n % n	
25°	20°
0.00 891 52.90 2686 8.55 1289 53.58 2707 9.29 1313 64.94 2703 22.61 1982 69.40 2620 24.91 2047 69.87 2605 25.59 2110 79.43 2450	0.00 73.00 59.50 26.05 18.80 27.70 80.50 25.10 23.16 27.02 93.10 24.50 40.00 26.15 100.00 24.30 51.25 25.66
25.59 2110 79.43 2450 28.31 2188 83.89 2364 35.15 2456 86.60 2311 36.42 2438 100.00 1962 43.40 2616	Teitelbaum, Gortalova and Sidorova, 1951
Springer and Roth, 1930	-10° -5° 0° +5° +10° +15° 0 75.70 74.96 74.27 73.51 0.1 70.58 69.38 68.68 67.77 0.2 65.19 64.13 63.01 62.16
% "(water 0° 1) % "(water 0° 1)	0.5 - 62.66 61.11 59.84 58.92 57.80 1.2 - 53.43 51.46 50.48 48.92 47.80
25° 0.0 0.5552 64.94 1.5220 22.61 1.0825 69.40 1.4670 52.90 1.4940 100.00 1.1408	2.6 46.18 44.42 42.66 41.11 40.13 38.86 5.7 34.28 32.81 31.47 30.48 29.71 28.86 13.8 27.74 27.32 26.96 26.54 26.19 26.05 26.6 27.24 26.96 26.54 26.19 25.77 25.48 49.1 26.96 26.75 26.26 25.94 25.62 25.18 100.0 26.26 25.80 25.80 24.92 24.57 24.15
	+20° +25° +30° +35° +40° +45° +50°
Lemonde, 1936	0 72.75 71.98 71.21 70.37 69.52 68.76 67.92 0.1 67.21 66.36 65.87 64.96 64.32 63.76 63.20 0.2 61.32 60.68 59.91 59.00 58.50 57.94 57.52 0.5 57.09 56.18 55.48 54.21 53.72 53.56 1.2 46.60 45.90 44.84 44.14 43.65 43.02 42.80
ηη	0.5 57.09 56.18 55.48 54.84 54.21 53.72 53.56 1.2 46.60 45.90 44.84 44.14 43.65 43.02 42.80
11° 0 1260 59 4440 1.2 1340 79 3920 6 1680 89 3420 12 2130 98 3000 23.5 3090 100 2870 45 4350	1.2 46.60 45.90 44.84 44.14 43.65 43.02 42.80 2.6 37.88 36.68 35.90 35.13 34.50 34.14 33.44 5.7 28.30 27.67 27.24 27.00 26.68 26.40 25.91 13.8 25.77 25.34 25.13 24.71 24.57 24.22 23.80 26.6 25.20 24.78 24.36 24.11 23.90 23.55 23.20 49.1 24.87 24.43 24.04 23.65 23.37 22.92 22.53 100.0 23.79 23.34 22.92 22.46 22.18 21.68 21.30

Winkelmann, 1890	Bennet and Garratt, 1925
# D n _D (aqsol.) % D n _D (aqsol.)	d15.5 n _D d15.5 n _D
40° 6.2 -0.0056 75.5 -0.0478 20.5 -0.0180 80.2 -0.0495 49.5 -0.0364 88.8 -0.0521 66.6 -0.0439 100.0 -0.0536	20° 0.8090 1.3855 0.9508 1.3576 .8153 .3851 .9580 .3558 .8333 .3840 .9643 .3533 .8484 .3815 .9701 .3510 .8630 .3790 .9751 .3483 .8765 .3765 .9801 .3445
Gerber, 1891 *** **	.8888 .3738 .9859 .3402 .9010 .3710 .9887 .3378 .9126 .3680 .9906 .3365 .9234 .3655 .9948 .3340 .9332 .3630 .9974 .3330 .9428 .3603
0 -0 40 -0.0301 10 -0.0078 50 -0.0356 20 -0.0167 60 -0.0407	Frankel, 1930
30 -0.0241 100 -0.0532	% n _{Abb} e % n _{Abb} e
Doroschevskii and Dvorzhanchik, 1908	13° 0 1.33352 16.782 1.34984 3.251 .33667 25.689 .35671 6.554 .33964 36.088 .36337 8.225 .34143
% n _D % n _D 15° 20° 15° 2 0°	8.225 .34143
0.0 1.33345 1.33306 47.13 1.36920 1.36767 1.90 .33512 .33476 63.22 .37719 .37551 4.33 .33740 .33687 77.23 .38232 .38052 13.25 .34608 .34542 89.45 .38594 .38406 21.20 .35340 .35237 91.55 .38644 .38456 23.24 .35492 .35383 95.08 .38711 .38522	Fowler and Hunt, 1941
4.33 .33740 .33687 .77.23 .38232 .38052 13.25 .34608 .34542 .89.45 .38594 .38406 21.20 .35340 .35237 91.55 .38644 .38456 23.24 .35492 .35383 95.08 .38711 .38522	% n _D % n _D
4.33 .33740 .33687 77.23 .38232 .38052 13.25 .34608 .34542 89.45 .38594 .38406 21.20 .35340 .35237 91.55 .38644 .38456 23.24 .35492 .35383 95.08 .38711 .38522 34.24 .36192 .36059 97.95 .38736 .38550 37.77 .36403 .36269 100.00 .38729 .38547	25° 0 1.333 62 1.3735 5 .3375 66 .3755 10 .342 70 .3770 15 .346 75 .3790 20 .351 77 .3795 25 .354 80 .3800
Vrevskii, 1910	30 .357 85 .3850 35 .360 90 .3830
≰ n _D ≰ n _D	44 .365 95 .3840 50 .368 100 .3840 52 .370 60 .373
20° 0.0 1.33296 57.73 1.37243 9.72 .34195 61.62 .37415 26.44 .35555 71.20 .37798 28.72 .35713 78.41 .38053	Anissimov, 1953
34.71 .36072 86.41 .38299 42.99 .36526 93.34 .38451	% п _D % п _D
50.46 .36899 100.00 .38499	15° 0 1.3333 60 1.3754 10 .3429 70 .3795 20 .3523 80 .3831 30 .3590 90 .3860 40 .3651 100 .3873 50 .3705

Thwing, 1894	Jacobson, 1951
χ ε % ε 	vol% sound velocity vol% sound velocity
15°	(m/sec.) (m/sec.)
0 75.50 65 37.52 10 69.50 70 36.87 20 62.80 77 36.00 25 60.08 80 28.92 35 53.35 90 21.60 50 44.63 95 20.78 55 42.00 99.8 20.45 60 38.75	0 1486 58.8 1415.1 9.6 1558 69.5 1370.2 19.3 1597.6 79.2 1332.2 29.3 1553.8 88.6 1291.8 39.0 1503.6 100.0 1225.0 49.0 1454.7
Salazar, 1924	Martin and Brown, 1938
% ε % ε	molγ ε molγ ε
25°	25°
0.000 81.12 55.020 33.08 5.014 77.64 57.494 32.89 9.999 73.24 60.002 30.81 10.005 73.67 62.499 29.27 15.009 69.48 62.507 29.35 15.010 64.81 64.989 28.51 20.027 59.25 69.966 26.10 25.015 53.05 69.985 25.72	5 20.4 80 46.2 10 20.8 90 59.7 20 21.8 95 68.27 40 25.0 100 78.48.
25.015 53.05 69.985 25.72 30.018 50.67 70.011 26.21 32.269 47.13 75.011 24.09 35.744 44.19 76.904 22.92 40.010 40.80 80.000 22.20	Schwers, 1912
45,029 39,69 84,774 21,29 45,452 36,72 86,964 20,60 49,904 35,86 89,959 20,03	% t (a) magn. $\lambda = 589.3 \lambda = 546 \lambda = 436$
50.001 34.86 94.989 19.43 52.664 34.90 96.862 19.01 54.992 33.68 99.870 18.93	0 15.4 0.844 0.9985 1.617 29.2 .842 .9963 .613 52.0 .836 .9904 .603
Åkerlof, 1932	20,733 15.5 0.8435 1.0003 1.6238 39.165 14.9 0.8232 0.9850 1.6016 100 17.3 0.7615 0.9081 1.4815 59.5 0.7231 0.8617 1.4017
β ε 20° 40° 50° 60° 80°	
0 80.37 73.12 69.85 66.62 60.58 10 73.52 66.81 63.66 60.65 54.77 20 66.54 60.24 57.23 54.49 49.01 30 59.21 53.46 50.72 48.19 43.00 40 51.68 46.55 44.08 41.76 37.53 50 44.29 39.70 37.38 35.39 31.42 60 37.51 33.54 31.49 29.71 26.22 70 31.56 28.20 26.42 24.92 21.84 80 26.83 23.89 22.39 20.95 18.28 90 23.34 20.67 19.37 18.07 15.81 100 20.81 18.25 17.11 15.88 13.86	

				Youn	g and Fo	stey, 1901		
Zetterman, 1	881			mo	 1 <i>4</i>	t		
%	U	\$	U	II III	•	initial	final	
10	1.055	20° 40	0.972	6)	27.7	21,55	
20 30	1.082	50	0.908	11		ith a great	amount of	water Dt=-4.0°
				:				
Pagliani 19	22			Cla	rke, 190)5		
Pagliani, 18	U	%	U	96		Q(cal/g)	K	Q _(cal/g)
		25°		70.	9	2.02	52. 5	4,20
0 10,00	1 1,079	52.63 62.50	0.903 0.854	63. 56.	9	2.81 3.68	39.0 31.6	5.63 5.03
18.18 25.00	$\frac{1.094}{1.050}$	76.92 86.92	0.785 0.733	II				
35,71 40,00	1.003 0.972	100.00	0.659					
				Bos	e, 1907			
				%	0°	21.03°	Q mix 43.44°	79.70°
Bose, 1907				.			le mixture	
K		U		5	151.0	95.4	16.6	-54.3
0.2-4	.9° 21	.1-26.6° 3	8.6-42.3°	10 15	180.1 156.4	97.4 81.7	$\substack{23.3\\6.1}$	
0 1.00 5 .03	6	0.999 1.021	0.999 1.012	20 25	133.0	64.2 47.4	-13.0 -30.3	-
10 .05	2·	.040	.022 .028	20 25 30 35 40 45	91.6 74.6 59.2 44.7	$\frac{31.2}{17.0}$	-46.3 -60.6	-
15 ,06 20 ,08	6	.053 .056	.029	40	59.2	$\frac{2.8}{-10.0}$	-73.5 -85.4	-
25 .08 30 .03	6	.048 .026	.011 0.989	50 55 60	32.0 21.0		-96.1 -103.3	<u>-</u>
35 0.99 40 .95	3 3	0.994 .962	.966 .943	60	12.5	-34.2 -37.6	-106.0 -103.9	-
40 .95 45 .91 50 .87	3 6	.928 .899	.920 .898	65 70	6.4 1.9	-37.5	-98.3 -88.7	-
55 .844 60 .81:	4	.870 .840	. 874 . 850	75 80	-2.0 -3.1	-31.0	-77.0 -61.8	-
65 .779 70 .746	9 6	.809 .776	.822 .796	85 90	-3.8 -3.4 -2.3	10.4	-44.1	-
75 .713 80 .680	3	.743 .708	.769 .743	95	-2.3		-23.8 alcohol	-
15 .06 20 .08 25 .08 30 .03 35 0.99 40 .95 45 .91 50 .87 55 .77 70 .74 75 .71 80 .68 85 .64 90 .61 90 .57	5	.676 .643	.716 .685] _	-0.4			
95 .57 100 .53		.608 .568	.649 .596	1 <u>0</u>	-2.6 -4.9	-10 -20	-25 -49	
.55	<u> </u>			15 20	-6.4 -4.6	-29 -38 -47	-73 -96	
				20 25 30	-2.0 +2.3 10	-55	-119 -141	
				35 40 45	10 22 40	-58 -58	-160 -176	
Doroshevski	, 1910-1	i		§ 50	63	-50 -40	-186 -190	
% l	J	K	U	55 60	100 144	-20 +9 48	-190 -184	
	16-100			65 70 75	211 302	103	-174 -154	i
	0060 0277		. 8881 . 8381	80	443 659	186 319	-120 -62	
19.99 .	0213 0003	80.02 90.02	.7929 .7315	85 90	1033 1764	541 982	+42 +140	
40.04 0.	9671 1	.00.00	.6505	95 100	3030 3750	1907 2613	+730 +1250	
47.70 0,	9249 							
11 TO THE RESERVE OF THE RESERVE OF THE RESERVE OF THE RESERVE OF THE RESERVE OF THE RESERVE OF THE RESERVE OF				1				

Bose, 1907	Dimmling and Lange, 1951
	M Q mix M Q mix (cal/mole) (cal/mole)
cal/mole water 5 +160 +100 -48 10 200 108 - 15 183 97 - 20 165 30 - 25 149 63 - 30 131 45 - 35 114 26 - 40 97 5 -	25° 0.10 2184.7 3.0 1376.0 .20 2172.4 5.0 606 .30 2159.7 7.0 241 .40 2145.3 9.0 37 .50 2127.9 11.0 -58 1.50 1951.9 13.0 -28
40 97 5 - 45 81 -18 - 50 63 -40 - 55 48 -62 - 60 33 -84 -	M Q dil initial final (cal/mole)
20 165 80 - 25 149 63 - 30 131 45 - 35 114 26 - 40 97 5 - 45 81 -18 - 50 63 -40 - 55 48 -62 - 60 33 -84 - 65 19 -106 - 70 +7 -125 - 75 -5 -140 - 80 -16 -152 - 85 -26 -162 - 90 -35 -170 - 95 -44 -178 - 100 -52 -185 - cal/g mixture	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
14.92 +7.53 +4.74 +1.813 -2.27 27.03 +7.95 +4.42 +0.378 - 37.03 +6.37 +3.34 +0.259 - 45.45 +5.99 +2.62 -0.470 - 52.63 +3.88 +1.63 -1.050 - 58.82 +2.96 +0.533 -1.510 - 64.22 +2.26 +0.513 -1.860 -	.4233 .0105 55.93 " 0.65 .5690 .0141 80.82 " 0.63 4.7293 .0038 1571 " 9.8 9.9077 .0027 2228 " 9.7
68.96 +1.66 +0.103 -2.110 - 73.16 +1.22 -0.244 -2.320 - 75.92 +0.807 -0.513 -2.430 - 80.29 +0.535 -0.669 -2.490 - 83.22 +0.183 -0.864 -2.440 - 86.09 +0.143 -0.832 -2.300 -	Raikow, 1902 vol% Flashing vol% Flashing point point
88.61 +0.034 -0.812 -2.080 - 90.99 -0.030 -0.713 -1.800 - 93.02 -0.071 -0.589 -1.490 - 94.98 -0.101 -0.459 -1.156 - 96.77 -0.079 -0.323 -0.790 - 98.46 -0.043 -0.164 -0.410 -	713 mm 4 56 50 31.50 5 52.25 60 31.25 7.5 46 70 30.75 10 41.75 80 29.50 20 33.75 90 28 30 32.25 100 23 40 32

Make a T				Brunjes and Bogart, 1943
Water + Isopr Heterogeneous		(C_3H_80)		t wt% mol%
ne ter ogeneous	equilibria	_		L V L V
Lebo, 1921		4		81.21 97.85 96.82 93.19 90.11 81.01 97.29 96.07 91.53 88.01 80.75 96.33 94.97 88.72 85.00
L V	b.t.	L V	b.t.	80.51 95.05 93.54 85.20 81.26 80.30 93.42 91.77 81.00 76.98 80.14 91.77 90.47 77.02 74.01
0 -1 1.3 19.7 1.6 35.3 2.2 34.8 3.6 49.4 4.8 55.0 5.0 67.6 8.4 69.2 10.2 70.7 11.4 75.3 13.2 75.0 16.5 78.8 17.3 76.2 18.8 77.7 20.5 78.8 24.7 79.3 24.7 78.3 27.6 79.3 27.6 79.3 20.4 80.2	99.3 96.6 93.7 92.2 88.1 88.0 86.1 84.9 85.0 84.1 83.2 83.1 82.3	34.0 80.7 333.8 79.9 39.8 80.7 44.0 81.2 46.0 81.2 50.5 81.7 554.2 82.3 60.3 82.1 664.0 82.8 67.5 83.3 77.7 85.6 81.1 86.5 88.7 91.5 94.3 92.5 94.3 96.6 100.0	81.6 81.3 81.3 81.3 81.2 81.1 81.1 81.0 81.0 80.9 80.8 80.8 80.8 80.8 80.8	80.07 90.15 89.28 73.33 71.42 80.05 88.48 88.27 69.71 69.31 80.03 88.15 88.02 69.05 68.79 80.04 87.90 87.74 68.57 68.24 80.05 87.82 87.86 68.38 68.46 80.16 87.70 87.70 63.13 68.13 80.04 86.08 86.91 64.96 66.59 80.14 82.39 85.34 58.38 63.58 30.44 73.95 82.98 45.97 59.39 80.77 62.30 81.27 33.14 56.54 81.11 51.15 80.67 23.87 55.59 81.19 45.24 79.93 19.86 54.44 81.39 39.35 78.99 16.29 52.98 81.41 31.90 79.50 12.32 53.78 82.63 23.50 77.10 8.43 50.24 83.80 14.59 74.42 4.88 46.60 89.04 8.01 63.18 2.54 23.99 90.80 6.50 57.96 2.04 23.08 93.19 4.38 49.00 1.36 22.44 95.30 2.72 36.55 0.83 14.73 98.87 0.52 11.16 0.16 3.64
Schumacher and	llunt, 1942			Benjamin, 1932
L %	v	% L	v	
84.7	760 m 89.7 89.0 87.9 87.0 85.9	61.6 59.3 58.1 52.0 44.0	79.9 80.0 79.2 78.8 78.3	0.0 21 50.0 45.0 14.5 29.4 68.0 50.1 27.0 34.7 84.0 52.8 38.0 39.4 100.0 49.5
82.5 80.0 78.0 75.8	84.9 83.9 83.3 82.5	41.8 33.0 24.0 17.3	77.7 77.0 75.2 74.8 71.8 70.8	Doroshevski and Polyanski, 1911
73.5 72.7 68.0 65.0	82.2 81.8 80.9 80.5	11.6 10.7 7.20 5.00	71.8 70.8 63.3 52.6	% b.t. dt/dp b.t. dt/dp b.t. 700 mm 760 mm 800 mm
62.8 Az : 87.4 %	80.1 alcohol	b.t. = 80.3°		0 97.72 0.0380 100 0.0360 101.44 10.01 86.81 .0372 89.04 .0302 90.25 20.02 82.55 .0368 84.76 .0340 86.12 29.53 81.21 .0357 83.35 .0330 84.67
Langdon and Ke	yes, 1942			39.98 80.50 .0350 82.60 .0332 83.93 49.97 80.02 .0353 82.14 .0332 83.47 59.99 79.59 .0352 81.70 .0330 83.02
mol %	at b.	t. mol %	v	69.97 79.06 .0352 81.17 .0330 82.49 79.94 78.56 .0342 80.61 .0328 81.92 89.94 78.36 .0345 80.43 .0332 81.76 100.00 80.36 .0342 82.42 .0330 83.72
9.90 22.90 29.80	3.74 18.83 48.84 52.44 54.10 57.72	51.40 58.45 69.40 82.75 91.35 96.25	59.85 63.02 68.92 79.55 88.50 95.03	

Wilson and Simons, 1952	Properties of phases.
p b.t. mol%	
A 7	Turbaba, 1893
760 80,10 68.70	% d
380 63.90 67.50 190 49.33 67.05	0° 5° 30°
95 36.00 66.70	10 0.9856 0.9838 0.9794
	19.97 .9777 .9719 .9642 30.08 .9650 .9549 .9444
	40.10 .94459218 49.97 .92258991
Ryland, 1899	59.07 .90158775 79.91 .8530 0.8405 .8275
Az 78.5-79.5 89% (768mm)	89.96 .8288 .8162 .8030 100.00 .8016 .7896 .7770
Young and Fortey, 1901	Doroshevski, 1910
	% d % d
Az 80.40° 87.9%	15°
	0 0.99913 59.94 0.88705
	10.00 .98302 70.08 .86326 19.99 .97160 80.01 .83977
Lemonde, 1938	30.00 .95493 89.66 .81699 39.95 .93345 100.00 .78913
vol% D vol% D	49.97 ,91051
16°	
1 0.89 64.5 0.174 14.5 0.63 75 0.204	
35.5 0.28 88 0.275 53 0.155 96 0.370	Atkins and Wallace, 1913
0.100 /0 0.00	t d t d
	100% 77.17%
Abegg, 1894	0.0 0.81873 0.0 0.87069 11.8 .80847 13.4 .85970
M f.t.	45.3 .78009 24.2 .85117 40.7 .83337
1.001 -1.845 2.002 -4.125	
3.004 -7.343 4.005 -11.820	Lebe 1921
5.006 -16.330	Lebo, 1921 g d g d
	20°
Ross, 1954	0 0.99000 65.22 0.87003 9.58 .98293 74.35 .84828
\$ f.t. % f.t.	21.39 .96847 85.09 .82282 33.17 .94590 90.35 .90866
0 0 40 -19.4 10 -3.4 50 -21.4	43.02 .92418 100.00 .78556 53.07 .89868
10 -3.4 50 -21.4 20 -8.0 60 -23.3 30 -14.8 70 -27.2	
30 -14.0 /0 -2/.2	

WATER + ISOPROPYL ALCOHOL

Thompson an	d Molstad, 19	945			Jacobso	n 1051			
mol% wt	% d	molx	wt%	đ	vol%	d	vol%	d	
	35°				V0176	20°			
1.58 5.0 2.21 7.0 3.21 9.9 4.57 13.7 6.93 19.8 11.33 29.8 23.03 49.9	1 .98186 6 .97726 6 .97136 9 .96112 8 .94087	34.81 41.00 54.33 67.94 81.01 86.63	64.02 69.84 79.86 87.60 93.43 95.58	0.86044 .84647 .82248 .90358 .78924 .78382	0.0 9.8 19.5 31.9 39.2 49.3	0.9982 .9850 .9735 .9556 .9417 .9208	59.3 69.2 79.5 90.1 100.0	0.8980 .8745 .8490 .8188 .7871	
					Wilson	and Simons	, 1952		
Olsen and W	shburn, 1938	3		·	mol%	đ	mo1%	đ	
×	1 %	đ				25°			
14.95 . 25.20 . 33.93 .	25° 0971 53.97 1838 64.81 1745 75.83 1578 87.51 1398 100.00	.841	4 5 0		0 10.10 20.11 29.93 40.15 50.01	0.98708 .95356 .91254 .88166 .85696 .83847	59.98 70.11 80.12 89.17 99.98	0.82314 .81011 .79912 .78978 .78091	
<u>-</u>	Keyes, 1943					hinson, 192	:6		
mo1%	d mol#	d			N	maximum	density	temperature	
5 .	35° 99406 15 96951 20 94702 25	0.924 .904 .887	79		1 0.5 0.25 0.125		2.65 3.70 4.00 4.00		
Irany, 194	I				Jacobso	on, 1951			
vol% mo	% d	vol%	mo1%	d	vol%	π	vol%	π	
b	2 0°					20	0		
0.0 0 9.0 2 21.9 6 32.2 10 49.4 19 67.4 33	1 .9618 0 .9261	77.4 78.4 87.0 94.0 100.0	44.8 46.2 61.5 78.8 100.0	0.8570 .8549 .8304 .8104 .7896	0.0 9.8 19.5 31.9 39.2 49.3	45.38 41.61 39.04 40.88 44.14 49.09	59.3 69.2 79.5 90.1 100.0	55.07 61.83 69.47 79.61 93.19	

							7.00
Viscosity			Bennett	and Garrat	tt, 1925		
Lemonde, 1933			đ	n_{D}		đ	n _D
vol% η	vol% η		0.7932 .7945	.377	75	.9345 .95 1 1	1.3612 .3590
0 1100 1 1140 9.6 1360 14.5 2060 19 2500 35.5 3770 38.5 3940	53 4330 64.5 4230 75 4120 88 3640 96 3000 100 2690		.8152 .8330 .8483 .8631 .8764 .8891 .90148 .9254	376 375 374 373 373 371 369 369	59 58 58 55 50 22 78 58	.9585 .9662 .9701 .9745 .9800 .9856 .9878 .9903	.3567 .3542 .3510 .3478 .3435 .3392 .3375 .3358 .3340 .3335
Olsen and Washburn,	1938						
% п	<u> </u>	<u>n</u>	Benjami:	n, 1932			
0.00 899.		3100	mol 9	n _{He}	y	mol %	n _{He y}
7.55 1280 14.95 1730 25.20 2320 33.93 2770 44.08 3010	64.81 75.83 87.51 100.00	3010 2710 2330 2080	0.0 19.5 30.1	.364	145	70.2 84.3 100.0	1.37437 .37487 .37529
Irany, 1944			Schumach	ner and Hunt	ւ, 1942		
vol% mol% n	vol% mol%	η	%	n _D		%	n _D
0.0 0.0 100 9.0 2.3 15 21.9 6.0 24 32.2 10.1 313 49.4 19.0 377 67.4 33.1 375	10 78.4 46.2 20 87.0 61.5 50 94.0 78.8 100.0 100.0	3470 3400 2960 2600 2470	5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0	1.3 1.3 1.3 1.3 1.3 1.3	42 46 51 54 58 61 64 1	50.0 55.0 60.0 65.0 70.0 80.0 90.0	1.368 1.370 1.371 1.373 1.3745 1.3765 1.3775
Doroshevski and Dvo	rzhanchik, 1908		Åkerlöf,	1032			
% n _D 20	° 15°	20°	%	20° 40°	ε 50°	60°	80°
2.08 .33525 .3 10.78 .34334 .3 22.18 .35436 .3 25.83 .35740 .3 33.23 .36220 .3 44.93 .36796 .3 49.42 .36985 .3	3306 76.20 1.37789 3482 89.77 .37978 4274 92.78 .37986 55324 93.56 .37993 5613 94.56 .37988 6084 95.88 .37977 6641 97.49 .37968 6829 99.89 .37927 7403	1.37602 .37777 .37786 .37793 .37787 .37779 .37766 .37733	20 6 30 5 40 5 50 4 60 3 70 2 80 2	30.37 73.11 66. 15.72 59. 18.40 52. 11.07 45. 13.68 39. 16.28 32. 19.57 26. 14.44 21. 16.95 18. 16.06 18.	12 69.85 33 63.12 56 56.61 71 50.18 86 43.54 16 37.03 45 30.67	66.62 60.24 53.87 47.58 41.35 35.05 28.90 23.34 19.03 16.02	60.58 54.83 49.01 43.13 37.31 31.49 25.67 20.67 16.70 13.83 11.91

Jacobson, 1951	Sandonnini, 1913
vol% sound velocity vol% sound velocity	% Q mix(cal/gr.)% Q mix (cal/gr.)
m/sec. m/sec.	16 - 18°
20° 0.0 1485.8 59.3 1422.0 9.8 1562.1 69.2 1360.0 19.5 1622.2 79.5 1302.1 31.9 1600.0 90.1 1238.6 39.2 1551.0 100.0 1167.6 49.3 1437.4	5.0 3.510 50.00 5.343 10.00 5.571 75.00 1.845 15.00 7.351 80.00 1.118 25.00 8.712 90.00 0.234 35.00 7.953 95.00 0.325
	Dimaling and Lange, 1951
Heat constants.	M Q mix M Q mix (cal/mole) (cal/mole) 25°
Doroshevski, 1910	0.10 2820.1 3.0 2053
	.20 2812.4 5.0 1124 .30 2803.8 7.0 530
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
16 - 100°	1.50 2643.0 12.5 -40
0 1.0060 59.94 0.9189 10.00 .0325 70.08 .8695 19.99 .0525 80.01 .3184 30.00 .0278 89.66 .7749 39.95 0.9996 100.00 .7233 49.97 .9594	N Q dil. initial final (cal/mole) 25°
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Sandonnini, 1913	.0725 .0054 5.76 " 0.06 .1056 .0026 8.73 " 0.17
% U % U	.1427 .0035 11.22 " 0.23 .1603 .0040 12.80 " 0.16
16 - 18° 5.0	.1706 .0042 14.23 " 0.03 .2492 .0062 20.90 " 0.18 .4469 .0111 41.34 " 0.55 .5738 .0142 57.73 " 0.97 .3.1874 .0026 884.4 " 11.40 .4.8364 .0039 1623.4 " 10.50 .7.3498 .0924 2378.6 " 11.70 9.8208 .0025 2804.2 " 29.70
De Forcrand, 1892	Raikow, 1902
mol% Qdil mol% Qdil	vol% Flashing point
(mole alcohol) (mole alcohol)	717 nm
final conc.= 0.167 N	10 39 25
11 - 14° 5.3	20 28.75 30 22.50 40 20.25 50 20.25 60 19.25 70 18.75 80 17.25 90 15.25 100 11.75
10.0 3399	

Water + Rutul alcabal (C H		
Water + Butyl alcohol (C ₄ H Stockhardt and Hull, 1931	100)	Ernst, Litkenhous and Spanyer, jr., 1932
% b.t.	dew point	mo1% b.t. mo1% b.t.
L V		760 mm
0.1 1.9 99.4 0.2 4.9 98.4 0.3 7.1 98.3 0.6 11.6 96.8 0.8 15.7 95.4 1.2 19.2 93.7 1.4 21.6 93.4 1.5 22.5 93.4	98.5 97.5 97.8 96.1 94.8 93.5 93.4	0 100.00 26.7 93.16 2.6 92.98 36.2 93.19 5.7 92.98 49.4 93.40 9.4 93.04 68.7 96.45 13.9 93.09 100.0 117.69 19.6 93.14
1.8 24.2 92.8 2.0 24.4 93.0 2.5 24.8 92.7 42.3 25.0 92.8 42.9 25.2 92.9	92.8 93.1 92.8 92.9 93.0	Lecat, 1949 % b.t.
44.8 25.0 92.9	92.9 92.9	g b.t.
50.4 26.4 93.5 69.5 33.8 96.3 70.8 34.5 96.7	93.4 93.6 96.1 96.6	62 92.4 Az 100 117.8
70.8 34.5 96.7 72.5 35.9 97.2 74.3 37.1 97.9 93.0 64.8 108.8 94.5 67.7 109.6 95.3 70.1 110.6 96.1 73.3 111.5	97.1 97.7 108.2 109.2 110.1 110.9	Drouillon, 1925 % sat.t. % sat.t.
Smith and Bonner, 1949 mol % b.t. L V	mol % b.t. L V	5.50 57.0-60.0 30.11 129.5 5.74 45.0-67 34.01 129 - 6.03 38.5-71 39.60 128.5 6.23 32.5-76 45.82 127 6.46 27.5-81.5 50.84 125 6.55 23 -90.5 53.18 124.5
9.2 38.8 106.85 7 18.1 40.2 106.40 9 29.1 55.6 100.85 9 30.3 66.0 96.65 9 41.7 66.6 96.35 9 54.6 72.4 94.00 9	55.0 75.3 93.00 55.2 75.4 92.70 50.1 75.4 92.70 50.2 75.4 92.70 50.2 75.4 92.70 60.2 75.4 92.80 68.1 76.3 92.85 69.1 83.9 95.40 69.2 85.0 95.80	7,18 94 57,81 119,5 7,58 102 66,31 107,5 8,38 105.5 69,88 97 11,47 119,5 72,40 88 16,35 126,5 76,28 72 18,52 128 78,15 60,5 22,51 129,5 78,86 54,5 28,02 129 81,86 23,5
Pierre and Puchot, 1871		Hill and Malisoff, 1926
Az : 83.34 vol % 90.5°		% sat.t. % sat.t. L ₁ L ₂ L ₁ L ₂
Butler, Thomson and Maclenn mol % wt % p 25° 1.00 34.3 2.97	p 23.4	80.38 9.55 5 69.24 92.0 80.33 8.91 10 - 8.74 97.9 80.14 8.21 15 63.88 - 106.1 79.93 7.81 20 - 12.73 114.5 79.73 7.35 25 - 13.46 116.9 79.38 7.08 30 49.95 - 122.3 78.94 6.83 35 - 19.73 123.3 78.59 6.60 40 42.02 - 124.33 77.58 6.46 50 - 27.26 124.83
1.88 46.5 4.87 48.76 " " " 70.00 52.2 5.37 85.00 65.0 5.98 100.00 100.0 6.96	23.0 " 20.3 13.2 0.0	77.58 6.46 50 - 27.26 124.83 76.38 6.52 60 - 32.82 125.10 74.79 6.73 70 32.82 30.44 125.15 73.53 6.89 80

	
D.C.Jones, 1929	Properties of phases
% sat.t. % sat.t.	Properties of phases.
6.03 65.0 - 40.0 33.79 124.72 6.47 81.0 - 19.3 38.05 124.66 9.79 107.72 3.11 41.30 124.05 12.72 117.40 - 18.01 44.03 123.75 15.15 120.30 48.01 122.60 17.51 122.45 57.80 115.00 24.38 124.74 63.44 106.05 28.16 124.74 76.27 53.50 30.39 124.73 79.51 29.32 32.49 124.74C.S.T.30.46 13.00 32.85 124.75 80.82 -5.00	Atkins and Wallace, 1913 t d t d 80.95% 100% 0.0 0.86144 0.0 0.82393 12.55 .85216 13.4 .81471 24.20 .94339 47.3 .79049 43.40 .82836
Butler, Thomson and Maclennan, 1933	Reilly and Ralph, 1920
% sat.t. % sat.t.	g d g d
7.497 22.60 79.28 30.83 7.407 23.70 79.50 27.45 7.318 24.85 79.73 23.40 7.202 26.40 80.01 18.45 7.090 28.06 7.016 29.18	20° 79.94 0.84770 sat.sol. 0.61 0.99711 80.64 .84627 1.04 .99653 83.03 .84196 1.61 .99566 88.06 .83298 2.00 .99502 89.26 .8308 8 2.27 .99474 89.96 .82919 3.05 .99356 90.96 .82736
Reber, Mc Nabb and Lucasse, 1942	3.95 .99202 91.97 .82543 5.05 .99068 93.02 .82367 6.11 .98936 93.98 .82088
% sat.t. % sat.t.	7.06 .98793 95.06 .81962 7.32 .98771 95.97 .81790
30.99 91.15 68.19 124.35 33.93 99.45 69.48 124.40 C.S.T. 35.78 103.50 75.66 124.20 39.79 110.90 77.77 123.60 42.97 115.15 78.88 123.20	7.90 .98687sat.sol. 96.96 .81586 97.89 .81394 98.93 .81174 100.00 .80953
42.97 115.15 78.88 123.20 47.67 119.40 83.01 120.75 51.14 121.60 84.97 118.25 55.61 123.20 87.70 112.95 50.38 124.10 90.14 104.35 63.17 124.30 91.11 98.35 67.04 124.30	Wad and Gokhali, 1922 *** d
	20° 25°
Rabinovich, Fedorov and al., 1955 (fig.) % sat.t. % sat.t. L ₁ L ₂ L ₁ L ₂ 2.5 50 4 2.5 39 80	100.00 0.8096 100.0 0.8066 97.83 0.8143 97.83 0.8103 96.12 0.8177 95.92 0.8142 94.41 0.8210 86.99 0.8310 92.59 0.8245 86.25 0.8324 91.22 0.8269 85.14 0.8341 89.43 0.8312 82.22 0.8396 86.29 0.8348 (70.816.06)
2.5 50 4 2.5 39 80 2.5 49 20 3 33 100 2.5 46 40 4.5 24 120 2.5 44 60 10 10 125.1	86.23 0.8361 (79.81-6.96) L ₁ + L ₂ 83.63 0.8409 5.1 0.9892 82.14 0.8436 3.8 0.9911 81.45 0.8449 1.6 0.9945 (80.1-7.3) L ₁ + L ₂ 0 0.9970 5.1 0.9906
Timmermans and Kohnstamm, 1910	3.8 0.9924 1.57 0.9956 0 0.9983
C,S.T. = 134.2 P = 10_180	
dt/dp (10-180 kg) = -0.03	

N .	
	Lorentin Devil 27 at Maken 1041
Hill and Malisoff, 1926	Longtin, Randall and Weber, 1941 % D no
t d sat.sol. L ₁ L ₂	<u> </u>
L1 12	30° Alcohol-solution
5 0.8598 0.9883 10 .8567 .9877	
¶ 15 .8533 .988I	88.970 -0.00357
20 .8484 .9873 25 .8450 .9865 30 .8424 .9851	92.990 -0.00242 95.745 -0.00127
35 .8397 .9835 40 .8345 .9841 50 .8307 .9799	98.205 -0.00048 Water-solution
50 .8307 .9799 60 .8253 .9766	1.414 +0.00127
70 .8200 .9721 80 .3159 .9675	2.513 +0.00177 4.053 +0.00391
80 .3139 .9673	5.690 +0.00558
Na Hutchingon 1026	Raikow, 1902
Mc Hutchinson, 1926	vol% Flashing point vol% Flashing point
N maximum density temperature	714 mm
0.25 3.10	3 55 50 41
.125 .062 3.90	3 55 50 41 7 42.75 60 41 10 42.25 70 41
	1 20 41.25 80 40.25
	30 42.00 96.4 41 40 41.50 100 35
Silbereisen, 1929	
t σ (water/alcohol)	
$V + L_1 + L_2$	[
4 1.60 20 1.58 37 1.56	
1.60 20 1.58 37 1.56 Doroschewski and Dworzanczyk, 1908	
1.60 20 1.58 37 1.56 	
4 1.60 20 1.58 37 1.56 ————————————————————————————————————	
1.60 20 1.58 37 1.56 Doroschewski and Dworzanczyk, 1908 # n _D 15° 20° 1.73 1.33526 1.33482	
1.73 1.33526 1.33482 3.98 .33773 3.3721 96.95 44047 39866	
1.60 20 1.58 37 1.56	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	
1.73 1.33526 1.33482 3.98 .33773 .33721 96.95 .40047 .39866 98.58 .40090 .39909	

Water + Isobutylic alcohol (C ₄ H ₁₀ O)	38.76%
Michels, 1923	135.7 3625
t p t p	41.85% 137.4 3728 ¹ 36.6 3633
0%	5.77
132.32 2171.7 118.02 1420	47.86% 48.76%
131,96 2148 114,12 1225.5 131,87 2135 109.72 1061.0 131,79 2161 105.49 932	131.8 3186 132.9 3326
131.69 2134 104.82 906.5 131.32 2119.5 102.78 848	50.18%
130.14 2054 102.69 844.5 127.40 1878 98.44 725	138.6 3951 132.8 3361 133.2 3402 131.9 3270
123.29 1652 88.70 504	60.17%
123.14 1651.5 80.90 372 118.59 1432	138.3 3977 131.4 3151 138.1 3833 131.2 3139
4.15%	135.9 3604 128.9 2934
130.6 2644 94.3 829 129.4 2573 85.2 573	135.2 3528 128.6 2394 134.6 3464 124.3 2561 133.1 2323 123.6 2504
129.4 2573 85.2 573 125.5 2299 91.4 735 122.2 2119 75.7 409 119.4 1901 70.7 324	60.44%
119.4 1901 70.7 324 113.9 1645 63.3 236 109.2 1389 56.1 173	131.0 3126 127.4 2921
113.9 1645 63.3 236 109.2 1389 56.1 173 104.5 1208 51.3 128 98.7 985 50.9 129	131.0 3132 127.0 2775 130.9 3122 124.0 2545 127.7 2846
98.7 985 50.9 129 6.49%	127.7 2846 64.10%
·	138.9 3390 94.9 919
133.7 3117 118.1 1968 131.9 2963 114.7 1799 127.3 2595 109.3 1499 126.3 2543 103.5 1236	138.9 3390 94.9 919 133.5 3357 94.1 887 130.5 3111 87.4 692 124.9 2631 85.7 638
143./ 235/ 101.8 1117	124.9 2631 85.7 638 120.1 2261 78.9 501 70.2 349
121.6 2200 98.0 1019 6.99%	85,28%
,	140.8 3906 99.5 1068 135.0 3276 94.4 888
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	135.0 3276 94.4 888 131.2 3002 88.8 717 125.5 2534 83.4 586
131.7 2977 102.3 1224 131.7 2973 97.7 956 130.8 2882 94.3 909	119.8 2127 76.6 431 114.9 1820 71.0 349
130.8 2883 93.3 877 128.7 2720 85.9 648 127.5 2625 76.2 438	114.9 1820 71.0 349 110.4 1564 64.2 262 105.5 1322
120.5 2338 76.1 437	100%
110.1 1556 65.1 270	132.5 1779 109.2 791 132.4 1774 105.9 736 132.2 1762 105.6 734
107.9 1480 56.8 197 107.9 1478	132.2 1762 105.6 734 132.2 1765 105.2 709 129.7 1627 104.2 690
9.21%	
137.4 3567 112.4 1719 133.0 3164 110.4 1616 132.1 3084 110.3 1613	129.2 1611 100.2 807 ? 126.9 1491 99.2 566 125.3 1434 98.4 550 122.9 1312 97.1 520 ?
1 127.9 2723 106.2 1396 11	126.9 1491 99.2 566 125.3 1434 98.4 550 122.9 1312 97.1 520 120.9 1233 96.6 599 119.9 1198 95.4 486
116.4 1963	120.9 1233 96.6 599 ? 119.9 1198 95.4 486 119.5 1185 91.7 414
9.4%	119.3 861 7 91.0 405 119.1 1158 90.6 394
131.5 3006 115.8 1924 126.8 2708 109.4 1581	117.6 1102 88.0 276
126.0 2578 104.6 1327 121.0 2261 98.9 1112 121.0 2258	109.4 824 76.8 215
30.68%	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
135.8 3626 133.3 3401	

Konow	alov, 188						D	1002		
t	p	t	p	t	p	Young and	Fortey,	b.t.		
100	%	94.	.5%	50%						—
14.75 30.85 50.45 60.40 70.70 80.00 91.00 99.90	5.8 17.7 55.5 94.1 160.05 246.0 395.2 570.3	16.9 40.3 59.9 71.4 81.5 95.1	17.6 65.5 176.5 299.9 457.6 784.0	12.1 41.65 46.8 59.9 71.4 71.5 80.85 81.2 81.6 88.55 88.75	14.3 82.2 107.9 207.6 355.6 356.15 530.8 537.4 550.0 722.4 728.3 738.6	Stockhar	b.t.) = :			
6.	1%	sat.sol	(400)	89.1	738,6				point	
18.1 40.3 59.4 70.9 81.55 91.0	18.9 71.7 193.9 331.3 561.15 746.05	16.65 40.8 59.9 71.8 81.6 89.0 97.2	19.0 78.8 207.0 360.5 548.0 731.6 991.9			0.2 .3 .4 .5 .7 .9 1.2 1.4 2.0 2.2 2.5 3.2 4.1	98.9 98.1 97.1 96.8 95.9 95.1 91.5 89.9	4.3 6.9 10.1 11.2 14.7 16.3 21.8 27.0 28.6 32.2 32.7 32.8	98.0 98.0 97.0 96.0 95.7 94.8 92.8 91.8 91.8 89.5 90.1	
Bose, 19	909			•		4.6 33.1 33.0	89.5 89.6 89.5 89.2 89.2	32.6 33.1 33.0 33.2	89.1 89.5 89.2 89.2 89.2	
t		р	P1	P ₂		33.0 36.2 36.4	89.2 89.4	33.2 33.1	20.7	
12.1 41.65 46.8 59.9 71.4 71.5 80.85 81.2 81.6 88.55 88.75 89.1	1 8 10 20 35 35 52: 53' 54' 72: 72' 73'	L ₁ + 4.06 3.37 9.38 9.23 3.65 5.20 9.60 7.34 6.31 9.72 9.72	L ₂ + V 10.44 59.00 76.82 144.47 241.39 242.43 359.14 364.32 370,33 489.41 493.29 500.14	3.6 24.3 32.5 64.7 112.2 112.7 170.4 173.0 175.9 234.4 239.7	7 66 76 7 6 6 2 2 8 8 6 3	36.5 39.2 39.5 39.8 40.1 42.4 42.8 43.6 58.1 58.1 58.7 59.5 60.3 82.8 84.1 85.0 86.5	89.5 89.6 89.6 89.2 89.2 89.4 89.4 89.4 89.5 89.5 89.5 89.5 89.5 89.5 89.5 89.5	33.2 33.1 33.0 32.9 32.8 33.1 33.5 33.3 33.9 33.9 34.0 36.5 36.5 36.5 37.4 55.4 56.0	89.2 89.2 89.2 89.2 89.3 89.3 89.3 89.3 89.3 89.5 89.4 90.1 90.2 90.2 90.2 90.2 90.2 90.2	
Lecat,	1949					33 mol %	89.8°	59.9 Az	97.4	
%		b.1	t.			=====				=
33.2 100		89 108	.9 Az .0							
	A. O'CETT -									

		Colbu	rn, Schoenbi	ırn and S	Shilling,	1943	
Bylewski, 1932		_ mo1%	76	b.t.	mol	%	b.t.
% b.t. dew	b.t. dew	_ L	v		L	v	
point	point	-	756.2 mm			757.0	mm
760 mm 100.000 100.000 3.05 94.104 92.042 6.60 90.504 89.695 8.22 89.635 89.625 10.80 89.621 89.620 13.56 89.621 89.620 50.96 89.620 39.620 63.47 89.620 39.620 67.23 89.621 89.620 67.20 89.621 89.620 70.20 89.621 89.620 71.04 89.625 89.625 74.83 89.761 89.621 71.04 89.625 89.625 74.83 89.761 39.743 82.76 90.086 89.979 85.59 90.439 90.070 88.46 91.019 90.227 90.76 92.156 91.242	1075 mm 110.000 110.000 103.868 101.251 100.004 99.043 99.127 99.884 98.880 98.880 98.880 98.880 98.880 98.880 98.879 98.880 98.879 98.880 98.884 98.887 98.880 98.889 99.880 98.889 99.880 98.889 99.880 99.980 99.980 99.961 99.961 99.961 99.961	1.52 0.65 .27 .11 2.08 1.93 .92 .00 75.9 69.3 57.5 37.1	18.52 9.00 3.27 761.4 mm 31.6 30.4 31.0 22.6 760.0 mm 44.8 40.3 33.7	90,00 93,53 93,55 98,12 88,0 89,4 89,0 90,5 92,3 90,75 89,25 89,25	91.1	6.75 5.26 1.22 762.0 68.9 59.8 61.0 761.6	98,95 96,73 96,80
93.05 93.660 92.722 95.62 96.488 93.974 98.95 103.874 103.213	103.289 102.310 106.211 103.893 113.730 113.137	Alexej	ew, 1886				
100.00 107.894 107.894	117.729 117.729	%	sat.t.	%	sat.1	t	
1490 mm 0 120.000 120.000 3.05 113.784 111.642 6.60 109.667 108.362 8.22 108.588 108.266 10.80 108.167 108.169 13.56 108.167 108.166 50.96 108.167 108.167	2026 mm 130.000 130.000 123.632 120.362 119.484 117.824 113.588 117.530 117.684 117.495 117.499 117.484 117.490 117.484		113 123 127 129 131.5	41.58 56.6 56.8 69.3 70.3	131. 125 126. 103. 101.	5 5 0	
58.27 108.167 108.165 63.47 108.165 108.166 67.23 108.168 108.166	117.490 117.483 117.491 117.485 117.487 117.486		sat.t.	%	b.t.		
71.06 108.175 108.167 74.83 108.225 108.200 78.88 108.384 108.360 82.76 108.726 108.577 85.59 109.199 108.763 88.46 109.994 109.036 90.76 111.154 110.321 93.05 112.919 112.023 95.62 115.955 114.227 98.95 123.651 123.030	117.487 117.486 117.502 117.491 117.561 117.532 117.733 117.689 118.110 117.946 118.630 118.314 119.546 118.720 120.741 119.911 122.550 121.620 125.709 124.003 133.637 133.011 137.812 137.812	8.0 10.6 16.3 17.5 20.7 26.7 49.1 57.8 81.7	90.4 108.0 126.7 127.7 130.6 133.0 132.8 126.4 38.9	39.5 44.2 52.0 56.5 56.8 59.5 62.1 71.4 77.1 82.3	95. 94. 93. 92. 91. 90. 91. 93.	3 0 1 0 0 5 0 5 7	
			and Fortey	·			
			đ	%	đ		
		84.81 86.76 88.53 91.79	0.84829 .84470	97.72 100.00	0.82823 .82251 .81698	l	

Mueller and Abegg, 1907	Prop. 1021
% d % d	8 np % np
25°	D D
0 0.9971 71.4 0.8173	20°
0.70 .9923 77.1 .8133 2.15 .9853 85.6 .8081	0.00 1.3330 84.65 1.3922 2.64 .3356 89.90 .3930
2.18 .9855 100.0 .7984	83.36 .3917 100.00 .3940
Porochayaki 1010	
Doroshevski, 1910 % d % d	Alexejew, 1886
15°	% U % U
100.00 0.30540 2.18 0.9960 95.16 .8161 4.66 .9922 90.76 .8249 7.26 .9888 84.75 .8367 8.13 .9878	3.53 1.024 87.66 0.729 room temp. 5.62 1.032 94.12 0.691 85.03 0.764 100.00 0.665
83.63 .8392	
	Damasharat i 1010
Brun, 1931	Doroshevski, 1910 % U % U
% d % d	16 - 100°
0° 20° 0° 20°	100 00 0 110
0.00 0.99868 0.99823 83.36 - 0.83724 2.64 .99582 .99412 84.65 0.84910 .83367	95.16 .7057 4.66 .0031
9.45 .98618 - 39.90 .83615 .82300 100.00 .81810 .80406	90.94 .7364 6.76 .0090 90.76 .7368 7.26 .0191 84.75 .7696 8.13 .0281
	83.63 .7755 74 .8022
Silbereisen, 1929	
t o (water/alcohol)	
L ₁ + L ₂ + V	Alexejew, 1886
3 1.64 17 .78	t Q diss.
17 .78 22 .85 27	6.56
22 .85 27 .86 32 .84 37 .80	1 +115.6 19.5 59.4 51:1 8.87
37 .80	70.25 -26.31
	81 -52.20
Doroshevski and Dvorzhanchik, 1908	
g n _D g n _D	
15° 20° 15° 29°	
1.77 1.33533 1.33487 98.04 1.39729 1.39545	
6.35 .34030 .33979 98.67 .39745 .39557 97.22 .39711 .39528 100.00 .39770 .39583	

Bose	, 1907					Water + sec	. Butyl ale	cohol (C ₄ H ₁	0)
9.	Q mix	%	Q mix	%	Q mix	Boeke and I	lanewald, 1	942	
20.			74°		.72°	% (V)	b.t.	% (V)	b.t.
8.0 13.1 22.4 30.3 37.0 47.9 60.5 70.2 77.3 82.7 86.8 87.2 990.2	2.32 2.34 2.02 1.52 1.03 0.35 -0.48 -1.15 -1.57 -1.71 -1.65 -1.62 -1.53 -1.48	8.2 11.9 28.0 44.2 55.6 68.1 74.5 78.1 83.4 88.2 90.5 93.5	0.40 0.17 -0.61 -1.45 -2.18 -2.81 -3.27 -3.45 -3.10 -2.71 -2.04	8.2 20.6 46.1 70.5 79.2 89.5	-0.28 -1.01 -2.24 -3.90 -4.23 -3.66	98.8 98.3 97.3 95.8 97.0 95.0 94.4 94.3 92.5	98.4 98.2 97.7 97.2 97.0 96.3 96.3 95.8 95.8	91.8 89.0 87.2 82.8 82.5 81.7 80.0 78.5 78.0	94.2 93.0 92.1 90.9 90.0 89.8 89.7 89.7 88.7
90.2	-1.48					% (L)	b.t.	% (L)	b.t.
Raiko Vol%	w, 1902 Flas	hing poir	nt vol%	Flashi	ng point	1.3 1.7 3.8 4.5 4.6 5.4	96.0 95.1 92.7 92.5 91.8 91.7	80.5 81.6 84.1 85.3 86.4 87.5	87.5 87.5 87.6 87.7 87.8
ļ ———			714 mm			6.5 5.0	91.0 90.8	87.5 91.0 91.2 93.6	88.0 88.7 88.7
2 3 5 9 10 20 30	5 4 3 3	9.50 2.25 4.25 6 4.75 4.75 4.25	40 50 60 70 83 90 100	30	3.75 3.50 3.75 3.75 3.75 3.75	7.0 8.1 9.1 9.8 10.4 11.4 12.1 12.8 15.6 16.8	90.6 89.7 89.5 89.5 89.0 88.7 88.2 87.5	93.6 94.8 96.6 97.4 93.2 98.6 99.0 99.6	\$9.6 90.6 91.7 92.8 94.0 95.0 96.0 97.4 98.3
						Az 73%			
Young a	and Forte	ey, 1902							
mo1%	init	t	final			Lecat, 194	9		
60	22		19.15			%	b.t.	Dt.	
1			er, Dt =	+1.0°		0 68 70 100	100 - 87.8 99.52	-1.5 Az	

Timmermans and Kohnstamm, 1910	Dolgolenko, 1907
C.S.T. P dt/dp 116 5 - 125 -0.07	% sat.t. upper low
Timmermans, 1911 # C.S.T. f.t. upper lower	14.59 73.0 58.0 sample A 14.83 77.6 53.5 15.51 83.8 46.3 18.15 95.2 32.5 18.77 96.9 29.9 21.77 103.0 21.9 28.55 106.8 11.2 29.76 107.0 9.9 35.76 106.9 7.0 43.36 105.7 8.6 48.92 103.2 11.3 53.77 97.7 15.7 55.02 96.0 17.2 58.19 90.3 22.4 59.89 85.7 26.5 62.96 73.0 37.3 63.18 71.7 38.3
63.0 94.0 13.0 -1 64.0 87.0 20.0 -6 65.5 77.0 29.0 -11 2 nd sample	% sat.t. upper low third
14.90 89.5 43.5 - 21.00 107.7 19.0 - 26.35 112.5 4.0 -7 36.00 113.817 46.00 112.8 - " 55.95 107.1 - " 63.00 93.0 13.5 -1 64.50 82.6 23.0 -7.5 65.9512.5 Alexejew, 1886 sat.t.	13.60 85.5 44.9 - sample B 15.32 95.5 33.1 - 19.02 106.4 18.0 20.28 109.1 14.4 -23.4 22.81 112.1 6.2 -21.0 23.89 112.9 1.2 -14.9 25.18 113.5 27.60 114.3 31.23 114.8 40.09 114.5 43.31 114.0 45.27 113.4 48.45 112.1 49.71 111.4 53.79 106.9 55.18 105.1 59.73 97.0 61.09 93.4 5.9 +0.7 61.63 92.0 10.0 -2.3 63.65 85.8 18.2 -7.5 65.64 76.2 27.6 - 66.68 62.0 40.2 - Sample C 17.2 99.5 28.47 19.59 105.3 20.30 - 21.46 108.1 14.97 - 23.96 111.4 8.07 25.95 112.5 1.02 -8.4 26.33 112.7 -2.6 -4.3 26.33 112.7 -2.6 -4.3 27.89 99.9 27.89 99.9 27.89 99.9 27.89 99.9 27.89 99.9 27.89 99.9 27.80 11.6 97.5 +2.32 +2.22 27.6 61.46 91.6 13.22 -5.7

	Clough and Johns, 1923
Timmermans, 1922	% d % d
P kg sat.t. dt/dp	0 0.9982 73 0.8614
1 - 8.45 (C.S.T.) 100 + 5.3 + 0.1375 200 17.8 + 0.123 300 24.8 0.070 400 30.8 0.060 500 36.7 0.059 600 42.7 0.060 700 49.6 0.069 800 58.6 +0.090 840 homogeneous 73.5 -0.078 700 81.3 -0.045 600 85.8 0.041 110 105.3 -0.071 1 113.8	2 .9954 75 .8574 3 .9940 76 .8554 4 .9926 77 .8534 5 .9933 78 .8514 6 .9898 79 .8493 7 .9884 80 .8473 8 .9870 81 .8453 9 .9856 82 .8433 10 .9842 83 .8413 11 .9823 84 .8393 12 .9814 85 .8373 13 .9300 86 .8352 14 .9786 87 .8332 15 .9772 88 .8311
P kg sat.t, dt/dp	64.17 8792 93 8208
101	16
126 - 6.5 - 0.25 135 - 7.5 - 0.1 150 - 9.0 - 0.1	
	Boeke and Hanewald, 1942
	% mo1% d Dv(%)
Delcourt, 1927	21°
% Sat.t. f.t.	L ₁
upper lower	1.65 0.42 0.9956 0.14 3.26 0.83 .9932 .28
14.93 87.5 and 44.4 - 21.25 107.9 " 19 - 44.60 112.9 "	4.90 1.24 .9916 .47 6.56 1.70 .9890 .63 8.24 2.16 .9868 .80 9.92 2.64 .9846 1.00 11.62 3.14 .9825 .18 13.33 3.65 .9803 .43 16.79 4.80 .9753 .61 18.54 5.38 .9732 .79 sat.sol.(L ₁) .9712
	L ₂
	sat.sol.(L ₂) 0.8758 65.34 31.47 67.51 33.58 .3713 .30 71.89 38.34 .8629 .23 76.37 44.00 .80.92 50.78 .8459 .08 85.56 58.99 .8370 0.90 90.28 69.29 .82.50 .8170 .38 100.00 100.00 .8062

Water + tert.Butylalcohol ($C_{f k}H_{t0}0$)	Paterno and Mieli, 1908
	% f.t. % f.t.
Benjamin, 1932	100.00 +25.4 63.510 0.0
mol% p mol% p	98.66 18.8 63.194 0.0 98.65 18.7 59.149 -0.1 97.47 13.2 57.990 0.1
## ## ## ## ## ## ## ## ## ## ## ## ##	96.36 10.1 56.010 0.3 95.45 7.4 53.870 0.4 94.26 4.8 53.210 0.4 93.35 +2.8 50.640 0.6 92.00 0.0 47.770 0.9 90.59 -1.9 45.510 1.0 88.94 4.2 42.710 1.8 38.85 4.2 38.838 2.4 88.83 4.3 35.923 3.7 87.973 4.8 32.047 6.4
40° 8.7 32.5 83.0 61.0 12.5 42.3 37.0 72.5 32.2 51.0 100.0 100.0	86.72 4.4 29.972 9.6 85.03 3.0 24.680 11.7 83.35 2.8 23.760 10.9 79.39 1.1 22.564 10.7 78.61 1.0 19.263 8.7 74.92 -0.3 17.829 7.6 71.445 0.0 11.190 3.8 70.89 0.0 7.740 2.4 67.64 0.0 5.789 -1.5 67.14 0.0 0.000
Young and Fortey, 1902	
% b.t.	
88.24 79.92 Az 100 82.55	Ross, 1954 (fig.)
dp/dt (at b.t.) = 29.7 mm	% f.t. % f.t. 10 -3 90 -3 20 -8 95 +7
mol% t initial final	20 -8 95 +7 22 -9 98 +15 30 -9 100 +25.5 40 -9 50 -9
60 26.25 25.20 Dilution with much water, Dt = +4.0°	
	Young and Fortey, 1902
Doroshevski and Dolyanski, 1910	% d 20° 25°
% b.t. % b.t. 700mm 760mm 700mm 760mm	73.25 0.84832 0.84405 80.42 .83146 .82703 86.00 .81820 .81364 90.58 .80718 .80268
0 97.72 100 59.88 78.71 80.76 9.91 83.81 85.97 69.98 78.56 80.62 19.97 79.82 31.39 79.86 78.21 80.31 29.96 79.15 31.19 90.03 77.90 79.96 39.92 78.87 80.91 100.00 80.46 82.57 49.96 78.82 80.86	94.24 .79878 .79415 97.36 .79128 .78653 100.00 .78553 .78056
49,96 78.82 80.86	

Paterno and Mieli, 1908	Doroshevski, 1911
% d % d	% n _D % n _D
0° 24°	25°
00.00 0.999874 0.0000 0.997367 79.39 .854250 63.1938 .870800 92.09 .829410 71.4454 .851300 87.8503 .811750 100.0000 .783390 29.4° 49°	0 1.33284 59.96 1.37585 9.99 .34316 69.84 .37935 19.97 .35330 79.92 .38220 29.96 .36056 89.92 .38411 39.98 .36635 100.00 .38548 49.96 .37147
0.00 0.996649 0.00 0.98860	
79.39 .825170 79.39 .80372 92.08 .795400 100.00 .75319 100.00 .776980	Benjamin, 1932
% d % n(water=1)	mol% n _{He} mol% n _{He}
70° 24°	20°
	0.0 1.33279 68.8 1.38521 15.0 .36914 76.9 .38671 20.8 .37482 100.0 .38799
	Åkerlöf, 1932
Doroshevski, 1911	φ ε 20° 40° 50° 60° 80°
% d % d 20° 25° 20° 25°	0 80.37 73.12 69.85 66.62 60.58
0 0.9983 0.9971 60 0.8793 0.8752 10 .9840 .9820 70 .8558 .8516 20 .9698 .9668 80 .8323 .8279 30 .9491 .9454 90 .8088 .3042 40 .9259 .9221 100 .7856 .7806 50 .9026 .3987	10 71.75 64.91 61.84 58.83 52.87 20 62.93 56.77 53.82 50.87 45.14 30 54.17 48.33 45.44 42.96 38.47 40 45.38 40.01 37.35 34.93 30.59 50 36.59 32.16 29.80 27.80 24.24 60 28.91 25.02 23.01 21.30 70 22.30 19.00 17.41 16.29 13.94 80 17.23 14.60 13.44 12.51 10.45 90 12.97 10.93 10.00 9.36 7.66 100 - 8.44 7.67 6.96 5.90
Irany, 1944	
vol% mol%' d vol% mol% d	Raikow, 1902
25°	vol% Flashing point
0.0 0.0 0.9971 65.5 26.6 0.8765 10.0 2.1 .9853 77.2 39.2 .8760 19.1 4.3 .9743 88.2 58.4 .8173 29.3 7.3 .9583 100.0 100.0 .7810 45.5 14.0 .9230	712 mm 2 56.75 5 41.50 10 30.25 15 23.25 20 15.75
vol% mol% n vol% mol% n	25 14 30 14,75
25° 0.0 0.0 895 65.5 26.6 4710 10.0 2.1 1340 77.2 39.2 4800 19.1 4.3 1930 88.2 58.4 4580 29.3 7.3 2640 100.0 100.0 4430 45.5 14.0 3790	30 14.75 40 16 50 16.25 60 16.25 70 16.25 80 15.25 90 14 97.5 11.50

Water + n-Amyl alcohol (C ₅ H ₁₂ O)	Young and Fortey, 1902
	Az. 50.4% 95.15° 100% b.t.=132.05°
Lecat, 1949	
% b.t.	
46.3 95.95 Az	Lecat, 1949
100 138.20	% b.t.
	50.5 95.1 Az
	131.9
Morgan and Evans, 1917	
σ	
t 100% L L	Kosakewitsch P.P. and M.S., 1933
0 24.45 24.25 2 <u>6</u> .40	mol% d o
15 23.35 23.25 25.72 25 22.62 22.57 25.22	25°
25 22.62 22.57 25.22 35 21.89 21.90 24.80 45 21.16 21.24 24.36 55 20.43 20.58 23.90	0 0.808 23.70 3.33 .809 23.73
55 20.43 20.58 23.90	5.03 .810 23.75 8.08 .812 23.85
	12.80 .815 24.17
Jasper, Farrell and Madoff, 1944	
mol% n _D mol% n _D	Raikow, 1902
25°	vol% Flashing point
0.00 1.3479 20.10 1.3781	
0.88 .3510 23.81 .3802 1.83 .3537 28.21 .3823	1.3 62.25 92 47 100 42
2.88 .3565 33.54 .3835 4.03 .3591 40.24 .3852	
5.29 .3612 48.79 .3867 6.72 .3634 60.25 .3879	
8.03 .3659 65.97 .3889 10.08 .3659 72.58 .3896 12.05 .3688 80.27 3900	Water + Tert. amyl alcohol (C ₅ H ₁₂ O)
14.39 .3705 89.24 .3904	Hater Field, amyr alebhor (ogniggo)
17.03 .3732 100.00 .3908	Raikow, 1902
	vol% Flashing point
	714 mm
Water + Isoamyl alcohol (C ₅ H ₁₂ 0)	2.5 5 37.50
P 1021	7.5 32.50 29.25
Brun, 1931	10 29.25 20 26.75 30 26.75
	20 26.75 30 26.75 40 26.25 50 26.25 60 26.25
	60 26.25 70 26.25
3.00 95.50 95.00 114.50 50.00 94.50 97.00 118.00	82 26.25 90 10.50
60.00 94.50 100.00 129.50	100 19.50
N i	

Water + Amyl alcohol (mixture) ($C_y H_{1;2} 0$)

Pierre and Puchot, 1871 - 1872

 $Az : 60 \text{ vol } \% \qquad 96^{\circ} \qquad 100 \% \qquad \text{b.t.} = 130^{\circ}$

Fontein, 1910

	% sat.
36 and 59 29 " 72 23 " 81 18 " 87 16.5" 91 15 " 95 14 " 98 7 " 112 -0.5" 126 140 145 148.5	72 25.02 186.81 36.61 187.87 39.93 187.91 44.11 186.95 49.85 185.98 56.36 181.12 62.76 174.626 70.92 157.75.93 141.

Water + Alcohols.

Lecat, 1949

			Λz	
Name	Formula	b.t.	*	b.t.
Methylpropyl carbinol	(CyH120)	119.8	61.5	92,5
Methylisopropy carbinol	/1(C _y H ₁₂ 0)	112.0	67	91.0
Diethylcarbing	1(C ₅ H ₁₂ O)	116.0	64	91.8
Dimethylethyl carbinol	(C ₅ H ₁₂ 0)	102,35	72	87.35
Hexyl alcohol	(C ₆ H ₁ , 0)	157.85	25	97.8
Ethy1-2-butano	1 (C ₆ H ₁ ,0)	148.9	58	96.7
Heptanol	(C ₇ H ₁₆ O)	176.15_	17	98.7
Octano I	(C ₈ H ₁₈ O)	195,2	10	99.4
Ethyl-2-hexano	1 (C _B H _{1 8} O)	183.5	20	99.1

Water + 2-Methy1-3-butyne-2-ol (C_5H_80)

Conner, Elving and al., 1950

· ·	L,			
	wt%	mol%	wt%	mol%
		770	mm	
104.4 95.4 92.3 91.0 91.1 91.3 91.7 94.3 96.7 98.2 99.0 99.6	100 95.0 88.2 75.0 49.5 40.5 20.7 6.7 3.3 2.0 1.5 0.8	100 81.1 61.7 39.1 17.2 12.8 5.3 1.5 0.7 0.4 0.3 0.2 0.0	100 86.7 78.6 72.0 68.5 68.4 66.4 54.0 39.1 28.9 19.3 11.2 0.0	100 58.3 44.0 35.6 31.9 31.8 30.0 20.0 11.1 8.0 4.9 2.6 0.0

t	p		t	р
		100 %		

21.6	12.9	73.0	228.7
33.2	27.6	77.1	272.0
42.3	48.5	81.0	317.3
49.2	70.0	84.7	367.1
54.0	91.8	90.0	453.1
55.6	101.4	93.4	511.4
59.7	123.0	96.6	578.5
64.3	154.0	99.0	632.8
69.4	194.1	106.2	805.6

 wt %	mol %	^{n}D	
	20°		
 100 80 60 40 20 0	100 46.2 24.3 12.5 5.1	1,4206 .4104 .3959 .3783 .3576 .3330	

Water	+ Allyl a	alcohol (C ₃	H ₆ O)					
Benjam	in, 1932					, 1949		
mol	-	mol	*				b.t.	
	V 40°	<u>L</u>	v		0 72.	5	100 88.05 Az 96.95	:
17.6 31.3 52.3 70.4	41.2 46.7 55.7 84.1	82.9 93.1 100.0	90.3 96.7 100.0		Ahegg	, 1894		
mol%	p	mo1%	p		M	f.t.	M	f.t.
	40)°			0.50		3.003	-6.705
0.0 17.7 31.8 52.3	54.4 61.0 67.5 72.0	71.0 83.7 93.2 100.0	70.0 65.0 61.5 53.0		1.00	10 -1.893	4.004 5.005	-9.605 -12.245
					Benja	min, 1932		
Ewert,	1936				.no1%	f.t.	mo1%	f.t.
mol%	21°		o O° 35°	40°	10 20 30	-12.0 -15.3 -17.5	70 30 86.7	-41.0 -59.0 -81.9
0.0 10.0 20.0 30.0 40.0	18.6 25.9 28.5 29.8 29.6	32.6 43 35.8 47 36.7 43	1.9 42. 3.7 59. 7.7 63. 3.9 65. 0.4 65.	1 78.8 7 82.8 0 84.1	40 50 60	-19.7 -23.2 -31.6	89.4 95 100	-112.5 vitreous
50.0 60.0 70.0 80.0	29.6 29.4 29.1 28.2	37.3 49 37.0 45 36.8 47	9.3 65. 3.9 64.	55.6 85.0 44.8 84.5 22.9 82.5 Dittmar and Stewart, 1875			:	
90.0 100.0	26.3 22.3	32.7 42	2.4 53. 5.3 47.	7 72.3		ð	%	đ
						15		0.0544
mol%	P ₂	400	mo1%	p ₂ p ₁	100 98 96	0.8572 .8610 .8656	92 76 5	0.8734 .9026
0.0 10.0 20.0 30.0	27.9 35.8 40.4	55.4 50.9 47.0	70.0 5 80.0 5	8.3 36.2 0.6 31.9 3.2 25.5	94	.3694	3	.9991
40.0 50.0	43.6 46.3	43.7 41.3 38.7	90.0 5 00.0 6	6.8 15.5 1.2 ~				
					Wallac	e and Atkins	, 1912	
					%	đ	%	đ
Ditte	n and C.	10==			1	0	0	
# Dituma	b.t.	ewart, 1875			0.00 14.24	.991210	62.49 65.05	0.93443 .93077
- -	0.1.	%	b.t.		26.16 40.30	.967460	76.69 88.90	.91223 .88992
5 40	87.5 87.0 87.5	84 86	37.5 88		57.00 60.51	.943050 .937430	100.00	. 86931
50 60 70	87.5 87.5 87.5	88 90	89 89					
76 78	87.5 87.5	92 94 96	89.5 90 91.5					
80 82	87.5 88.0	98 100	91.5 93 95.5					

	Water + 0)xvacetoi	ne (CaHz),)		
Atkins and Wallace, 1913		,	36			
t d t d	Kling, l	905			. ـــ اســ اســ اســ ســـ	
76.60% 100%	%	min.of f	low %	min.of	flow	ي الدون عن من الدون عبد الدون عبد الد
0.0 0.91224 0.0 0.87028 13.0 .90125			1 7°			
13.0 .90125 22.35 .89340 45.70 .86984	0 5.9 13.3	177 189	65.0 67.0 67.5	417 434		
43.70 ,00704	1 21.0	212 237 259	68.0	436 436		
	27.5 31.3	27 3	69.0 71.0	430 425		
Dunstan, 1904-5	34.2 37.1 39.9	290 306 320	75.0 79.0 81.0	437 453 450		
% n % n	42.5 45.7	333 33 7	86.0 87.5	443 440		
25°	49.0 51.0	360 375	89.0 91.0	438 430	(1+1)	(2+1)
0.0 891 47.31 1887 14.06 1349 47.82 1891	54.0 58.0	380 390	95.0 100.0	395 382	(4.1)	(2,17
[25.98 1682 48.56 1892]	62.0	410	200,0	332		
33.70 1789 56.63 1391 35.53 1834 65.00 1796 36.53 1846 69.56 1750		نب التواطيع من التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع من التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع التواجع الت	یں میں لیے صبر است اس مارد اس است است یہ میں میں میں اس اس اس مارد اس است اس است است است است است است است ا			
36.53 1846 69.56 1750 45.21 1888 83.20 1537 46.88 1895 100.00 1232						
40.05 1895 100.00 1232	Water + 5	3_Hvdrox	v_2_butan	nne (C.H	.0 o)	
			,		o . ~ ·	
	Blom and	Efron,	1945			
Benjamin, 1932	%		b.t.	%		b.t.
mol% n _{He} mol% n _{He}	L	<u>v</u>		L	v	
20°	0.0454 .0482	0.0594 .115		17.4	16.5	100.0
0 1.33279 60.9 1.40627 17.6 .38527 79.4 .41074	.0933 .09 87	.127	-	22.4 27.8 34.1	19.8 22.8	=
37.3 .39495 93.1 .41213 52.3 .40211 100.0 .41282	.184	.262	-	40.9 49.2	22.8 25.5 28.7	100.5
	.469 .471	.651 .599	-	56.9 66.9	32.1 35.5	-
	.882 .960	1.26	-	72.8	39.0 42.0 47.9	-
Raikow, 1902	4.48 8.88	5.65 9.91	-	72.8 81.2 87.6 92.2	54.7	_
vol% Flashing point	13.4	13.7 14. 9	99.8	93.4 97.0	64.2 75.9 84.3	-
765 mm	17.0	16.8		98.9	96.8	-
2 66.50 5 54.50		L		b.t (Az)	
5 54.50 10 41.75 20 33.00				762	760	
30 30.50 40 30.00 50 29.75	15	5.0		99.94	99	87
70 29.25						
[90 25.75]						
100 21.50						

Water + Diacetone alcohol (C ₆ H ₁₂ O ₂)	100 mm
Hack and Van Winkle, 1954	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
t mol% wt% L V L V	52.10 8.02 3.01 36.0 16.7 52.15 12.01 3.44 46.8 18.7 52.30 20.19 3.96 62.0 21.0
760 mm	53 10 26 20 4 50 69 6 23.3
99.75 0.39 0.76 2.5 4.7 99.70 0.82 1.28 5.1 7.7 99.70 1.82 2.11 10.7 12.2 99.50 2.46 2.62 14.0 14.8	53.70 36.85 5.50 77.0 27.3 55.80 50.06 7.37 86.6 33.9 59.20 65.67 10.67 92.5 43.5 73.40 91.06 23.70 98.5 66.7
99.50 2.85 2.83 15.9 15.8 99.70 3.78 3.12 20.2 17.2	50 mm
99.90 7.83 3.98 35.4 21.1 100.00 11.42 4.60 45.4 23.7 100.20 18.37 5.88 59.2 28.7 100.70 24.62 6.86 67.8 32.2 102.20 38.88 8.85 80.4 38.5 109.10 59.64 12.88 90.5 48.8 109.10 61.05 12.88 91.0 48.8	38.20 0.48 0.32 2.0 3.0 38.21 2.03 0.98 11.8 6.0 38.25 4.26 1.84 22.3 10.8 38.90 8.22 2.93 36.6 16.3 39.20 11.59 3.29 45.8 18.0 39.40 16.54 3.62 56.1 19.5 39.70 25.84 4.28 69.2 22.4 40.20 36.57 5.37 78.8 26.8 42.00 45.63 6.49 84.4 30.9
400 mm	42.00 45.63 6.49 84.4 30.9 45.80 66.66 10.44 92.8 42.9 52.80 86.32 18.25 97.6 59.0 64.90 93.88 29.23 99.0 72.7
82.75 0.40 0.52 2.5 3.2 82.70 0.98 1.10 6.0 6.7 82.70 1.62 1.64 9.6 9.7 82.60 1.88 1.84 11.0 10.8 82.80 3.85 2.81 20.5 15.7	Az
82.75 7.77 3.62 35.2 19.5 83 10 11.92 4.19 46.6 22.0	wt% mol% b.t. p
83.30 17.82 4.05 83.80 25.40 5.71 68.7 28.1 85.00 34.69 6.71 77.4 31.7 86.75 45.25 8.35 84.2 37.0 91.20 61.65 11.55 91.2 45.7 100.50 80.60 18.68 96.4 59.9	3.3 0.53 66.40 200 10.5 1.79 82.60 400 15.7 2.81 99.50 760
108.90 89.97 26.21 98.3 69.6	
66.45 0.23 0.25 1.5 1.6 66.45 0.23 0.27 1.7 1.7 66.40 0.48 0.52 3.0 3.2 66.50 0.54 0.53 3.4 3.3 66.70 1.03 0.93 6.3 5.7 66.75 1.64 1.30 9.7 7.8 66.75 1.64 1.30 9.7 19.2 12.0 66.80 6.04 2.82 29.3 15.8 66.80 8.85 3.36 38.5 18.3 67.30 13.76 3.68 50.7 19.7 67.60 19.99 4.15 61.7 21.8 67.50 23.78 4.38 66.8 22.8 68.24 29.02 4.87 72.5 24.8 68.24 29.02 4.87 72.5 24.8 68.72 34.05 5.46 76.9 27.2 70.20 40.43 5.90 81.4 28.8 74.70 59.64 9.48 90.5 40.3 80.40 73.10 13.76 94.6 50.7	
80.40 73.10 13.76 94.0 30.7 98.40 73.89 35.75 99.0 76.2	

Water	+ 3-Hyd:	roxy-3-meth	ıy1-2-but:	anone (C ₅ H ₁₀ O ₂)	Water + Alco	hols				
Conner, Elving and al., 1950						Lecat, 1949 Name	Formula Az				
t	<u> </u>	L	v			Name	1 01 111414	b.t.		b.t.	Dt.min.
	wt%	mo1%	wt%	mo1%		Methyl-2-	(C6H12O2)	165	12.7	98.8	_
141.0 129.5 121.0 114.0	100.0 96.0 95.1 94.6	100.0 81.3 77.8 76.0	100.0 91.5 84.6 75.7 61.5	100.0 65.7 49.1 35.7		pentanone Methoxyethanol	(C ₃ H ₈ O ₂)	124.5	18,5	99.75	+22.0 (43%)
104.0 102.8 100.5 99.3	91.7 89.8 86.0 69.8	66.2 60.9 51.9 28.9	57.1 52.0 45.2	21.8 18.8 16.0 12.7		Ethoxyethanol	(C ₄ H _{1 0} O ₂)	135.3	30	99,3	+ 9.0 (4 4%)
99.1 98.9 98.8 99.0	59.8 49.4 44.1 37.7	51.9 28.9 20.7 14.7 12.5 9.7 7.3	43.5 41.8 40.9 39.3 37.0	12.0 11.3 10.0 10.3		Ethoxyethanol	(C ₄ H _{1 0} O ₂)	133	60	92,2	*
99.0 99.0 99.1	30.6 27.8 22.4 18.9	6.4 4.9 3.9	37.0 33.0 30.9 24.1	9.5 9.1 8.1 7.4		Propoxyethanol	l (C5H18O2)	151.35	28	98.75	+ 7.5 (45%)
99.3 99.8 99.9 100.0 100.1	$\frac{11.1}{9.0}$	2.1 1.6 1.4 0.8	21.1 19.2 19.2 15.0	5.4 4.5 4.0 3.0		Butoxyethanol	(C ₆ H ₁ 40 ₂)	171.15	24	99.05	+ 3.6 (4 7%)
100.2 100.3 100.3	5.3 4.5 3.7 3.0	0.7 0.5 0.4 0.0	13.1 11.4 9.6 0.0	2.5 2.1 1.6 0.0		*Carbide and C	;0 ========				
100.3 t	0.0 p	t	p			Water + Metho	xyethanol	(C ₃ H ₈ (02)		
<u>]</u>		100 %				4					
44.7 54.7	18.8 30.6	121,5 123,4	398.3			Timmermans, 1					
63.4 70.8	44.4 62.7	126.4 131.8	426.3 468.9 549.2			mo1% f.	t	no1% 	f.	t.	
79,9 89,2 97,0 103,8 111,4	93.1 130.0 176.8 225.1 289.3	134.2 137.4 144.0 145.7	585.1 644.7 776.6 815.8			0 0 10.6 -14 20 -45	.3	21.4 34.7 100.0	-49 -96 -92	.5	
 		·			·		على متى حتى التي هتى لتى التي بيد حتى التي التي التي التي التي التي التي التي			سی هکر کلی می سی کنو کب " کلی اللہ کلی کل کا اللہ اللہ اللہ " کلی کلی کا اللہ کا اللہ اللہ کا اللہ اللہ ا	ر بین پیده شور باشد شدر باشد کام باشد . نام ضد کیل سال کار جای می شد . کیل نیش کار چای شین کام کار ایک
wtx	mol%	^D	wt%	mol%	n _D						
	***	20°									
100 90 80 60	100 61.4 41.3 20.9	1.4148 .4124 .4076 .3939	40 20 0	10.5 4.2 0.0	1.3763 .3552 .3328						
						H					

Water + Etho	oxyethanol	Water + Isopropoxyethanol (C ₅ H ₁₂ O ₂)							
Timmermans,	1957		Timmermans, 1956-57						
%	f.t.	1,5	f.t.	mo1%			% :	 f.t,	
0 15.5 39.8	- 6.05 -21.30	52.1 69.25 100	-34.45 -65.50 vitreous	0 3.0 5.4 10.3	0 -2.8 -7.5 -15.1	20	.0	-19.5 -19.5 -29.7	
Baker, Hubbard, Michalowski and al., 1939					در امیدان کند اکثر کار آثار آثار آثار آثار آثار آثار آثار آث	ہیں۔ جس میں سے است جین شاہ ا میں جس میں شاہ اسام اللہ اسام اللہ میں اسام میں شاہ اسام اللہ اسام اللہ		ر میں میں جائے ہیں جائے جائے۔ میں اس خان جائے میں خان جائے میں میں بھی جائے جائے میں جائے میں	ن جن من مورشندات اثان شد الله الله الله الله الله الله الله الل
mol % L V L			1 % 	Water	+ Butoxyeth	nanol (C	6H1402)	
0.1	0.7	30°	14.5		nd Cretcher	<u></u>			
0.7 1.5	2.8 3.7	34.8 33.7	14.7 15.0	8	sat Lower	.t. upper	%	sat lower	upper
2.0 3.0 3.7 4.5 5.5 6.5 7.5 8.5 9.3 10.5	4.5 5.07 6.1 6.2 7.7 8.1 8.4 9.2	40.0 41.8 44.1 45.9 47.2 53.6 60.6 63.0 64.0 74.0 79.9	16.1 16.7 17.1 18.1 18.6 21.4 25.2 26.8 28.8 34.6 39.5 41.2	9.18 9.94 11.45 14.94 19.94 24.78 30.03	75 65.8 57.6 51.6 49.6 49.1 49.6	86 97.0 109.3 120.4 126.8 128.0 127.7	34.42 39.67 44.95 50.08 55.08 57.87	50,1 51,3 53,5 58,0 67,1 80	126.8 125.3 122.9 117.8 107.7
12.5 14.0 19.7 21.7 23.4 31.3 32.0	9.2 9.9 11.3 11.9 12.2 14.0 14.2	92.0 86.5 88.4 91.0 93.6 95.8 98.2	41.2 45.9 48.8 52.3 55.4 62.0 71.2	Poppe	, 1935 sat lower			_ سے انہ سر میں سے انہ انہ انہ انہ انہ انہ انہ انہ انہ انہ	
mol %	n _D	mol %	n _D	11.44	50,10	uppei 123,50			
100 95 90	1.4038 .4036 .4034	30° 30 25 20	1.3920 .3887 .3845	24.88 44.86 53.11 54.92	47.50 50.20 57.30 73.70	134.90 132.50 124.90 105.80)))		
85 80	.4032 .4029	18 16	.3822 .3793	Р	sat.	t. lower	P	sat	.t. lower
75 70 65 60 55 50 45 40 35	.4026 .4022 .4017 .4012 .4005 .3996 .3983 .3967 .3946	14 12 10 8 6 4 2 0	.3758 .3720 .3676 .3626 .3526 .3500 .3413 .3315	3.25 66.7 71.75 96.75 122.50 166.7 270.7 363.3 461.5 559.0	49.8 50.8	35-50.70 35-51.75 -52.85 0	758 857 894.3 916 935 945.3 1055 1080 1085	5	77 10 80 20 82 10 83 30 84 40 85 30 99 15 96 15 94 15 ogeneous
Water + Propoxyethanol (C ₅ H ₁₂ O ₂)					72.7	'5 			- 9*********
Timmermans, l	1957			P			t.t. per		
8	f.t.	Я	f.t.		5.75			-131.50	
0 22.0 40.3	0 - 5.35 -10.0	58.5 100	-15.1 vitreous		71.75		130.55	5-129 45	

WATER + n-BUTOXYETHANOL

Chathanalan 1054	Water + 1-Propoxypropane-2-ol (C ₆ H ₁₄ O ₂)						
Chakhovskoy, 1956 % sat.t. % sat.t.							
$\%$ sat.t. $\%$ sat.t. L_1 L_2 L_1 L_2	Cox, Nelson and Cretcher, 1927						
	% sat.t. % sat.t.						
8 50 62 1 96.3 40.40 46.6 130.6	lower upper lower upper						
10,50 50.0 114,7 48.60 50.7 123.3 14.90 46.5 126.6 50.30 51.7 124.4 23.50 44.5 133.2 55.60 61.0 115.0	10.7 75.0 125.5 45.2 35.0 171.2						
C.S.T. L ₁ : 27% 44.5 L ₂ : 26.7% 135.5	13.1 57.7 145.0 55.0 36.6 168.0						
	20.0 39.5 165.5 65.2 42.7 155.5						
	24.8 35.9 170.0 69.7 49.3 144.0 35.5 34.5 171.7 74.7 71.0 114.0						
Poppe, 1934	0% b.t. = 148.5-149°/730 mma d ²⁰ = 0.8886						
t opper,							
C.S.T. lower 47.7° dt/dp = +0.040							
	Water + 2-Propoxypropane-1-ol ($C_6H_{14}O_2$)						
	Cox, Nelson and Cretcher, 1927						
Water + n-Butoxyethanol ($C_6H_{14}O_8$)	% Sat.t. % Sat.t.						
	lower upper lower upper						
Timmermans, 1957	12.1 76.0 126.0 40.5 43.4 161.5						
\$ f.t.	14.9 57:2 143.5 50.3 44.7 159.5 20.0 47.2 156.0 60.0 48.7 151.5						
18.2 ~2.05	25.4 43.8 161.0 66.2 56.0 138.0 30.0 42.8 162.0 69.3 64.7 126.0						
36.8 -4.0 54.65 -6.0 L ₁ + L ₂							
67.4 -6.7 100 vitreous	0% b.t.: $150.5 \sim 151 \sim /730 \text{ mm}$ $d^{20} = 0.8925$						
سو الله الله الله الله الله الله الله الل							
	Water + Ethoxyisopropanol (C ₅ H ₁₂ O ₂)						
Water + Isobutoxyethanol (C ₆ H ₁₄ O ₂)	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
	Timmermans, 1957						
Cox and Cretcher, 1926	% f.t.						
% sat.t. % sat.t.	100 vitreous						
lower upper lower upper	61.8 -29 43.9 -18						
7.57 54.5 101.5 47.46 27.1 147.9 9.94 36.6 126.1 55.80 38.9 142.6	24.7 -7.7						
16.68 25.9 145.0 61.80 47.6 132.9 24.51 24.6 150.0 66.13 47.6 120.6							
31.54 24.7 150.2 67.70 51.0 114.5 39.70 25.5 149.3							
99.70 25.5 149.0							
	1						
3							
3							

Water + Glycol ($C_2H_6O_2$)

Trimble and Potts, 1935

0.0

27.3 59.8 61.3 73.7

81.3

83.6 87.0

88.0

90.1

94.2 97.4

97.9

98.7

99.9 100.0

0.0

14.0

45.9 53.4 61.5 71.3

81.2

88.0

90.8

93.6

95.9

97.7 98.0

98.9

12.9

16.3

25.6 33.7

43.6

52.7 63.1

71.4= 78.1

87.9

90.0 92.5 95.8

99.8

99.9

100.0

100.0

v

0.3

2.0

2.8

6.8 10.6 12.8

17.0

 $\substack{20.1 \\ 24.0}$

38.0

61.2

66.0

81.0

99.0

0.0

0.1

0.2 0.7 1.2 1.5 2.9 4.8 7.6

17.0

23.1 34.0

46.8

59.6 67.7 76.2 100.0

430 mm

0.0

0.3

2.8 3.8

6.0 7.2 10.7

17.1 21.0

31.0

42.8

49.1

56.0 66.4

76.6 83.5

100.0

603 mm

100.0

747 mm

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WATER + GLYCOL

b.t.

99.6 103.7 110.5

112.0

120.6

125.0 127.9

133.0

136.5

140.8

151.2

168.6

171.6

182.6

196.6

93.7 96.0 97.0

98.6

100.3

102,2 104.7

109.6

113.1

121.4

126.0

132.1

141.9

151.4 160.2

167.1 172.7

190.0

85.0 85.7

86.0

86.8

88.6

90.1

91.8

96.5

100.2

104.8

116.9

120.4

129.2

137.6 142.2

146.7 155.2 162.3 167.4

179.5

228 mm $0.0 \\ 23.1 \\ 31.9$ 72.4 73.3 74.3 75.0 76.2 77.6 79.3 0.4 $\substack{0.6\\1.0}$ 38.0 43.1 49.7 55.4 61.1 1.1 1.4 1.8 2.1 2.7 4.2 5.7 6.8 7.3 67.4 73.2 77.5 79.2 85.0 87.8 81.6 83.7 85.5 88.1 90.6 92.8 $11.0 \\ 13.7$ 95.5 98.8 17.1 21.2 29.4 40.2 103.0 90.0 91.4 94.2 95.2 107.1 114.3 122.1 96.6 97.7 99.8 125.7 44.8 57.3 91.2 133.4 155.1 100.0 100.0 160.6 % p V L 25° 23.8 21.4 18.4 17.4 15.1 11.5 0 15 35 0 0.42 0.91 1.21 50 60 75 90 1.64 5.62 13.78 100 0.28 100.00 Skripach and Temkin, 1946 b.t. L V 76 mm 47.0 37 51 68 73 76 84 91 0 49,0 53.5 56.5 58.0 0 0 0 66.5 2.5 9.5 85.0 99 36 66 100 128.0 136.0

245

ľ						Ross,	1954				
Carbide	e and Carb	on Chemi	cals, 194	17			f.t.	- %	f.t.		
	mol %	dew poi	nt h	o.t.		10	-3.5	80	-52.0		
		228 m				20 30	-7.8 -13.7	85 90	-39.0 -28.5		
						40	-23.2	95	-20.3		
	$\begin{array}{c} 0 \\ 10 \end{array}$	70 112.8	1 7	70 72.8		50 60	-36.8 -53.5	100	-12.5		
	20	126.7	' 7	75.6							
	30 40	135.0 141.7		78.3 83.3							
	50 60	143.9 150.6		88.3 93.9		Cabran	s, 1908				
	70 80	153.9 156.7	10	02.2 12.2		t	d	t	d		
	90 100	158.9 160.0) 12	24.4 60.0		l	 0%	20:		30	
		100.0	, 10			ļ	•	•			`
						0.00 18.32	1.01512	$\substack{0.00\\13.70}$	1.02974	13.95	1.04537 .04112
						34.08	.00681 0.99798	32.15	.01970 .00921	33.50	.03226
C	and Young,	1025 ((fig.)			53.32 64.88	.99220	53.40 72.75 94.70	0.99573	53.12 62.45	.02149 .01582
l	rvey, 1932	1720	116.			75.25 93.10	.98558 .97316	94.70	0.98210	73.65 94.65	.00821 0.99241
- and na	1702					i					
- %	f.t.	%	f	.t.			0%	50		60	
0	0	40	- 2	25.6 36.7		0.00 19.05	1.06120 .05265	$0.00 \\ 15.70$	1.07538	18.90	1.03851
10 2 0	-2.8 -8.3	50 60		18.9		32.50 52.78	.04545	34.05	.05€83	33.55	.06884
30	-15.6					62.20	.03366	53.65 62.20	.04417 .03827	52.97 63.00	.05550 .04825
						73.15 93.90	.01976	73.65	.03304	73.80	.04004
						!		94.20	.00364	93.50	.02400
1											
Dwant	1027					ļ	0%	80		88	5%
Ewert,	1937					0.00	1.10003	0.00	1.10982	0.00	1.11679
Ewert,	1937 f.t.	E	mo1%	f.t.	E	0.00 17.80 33.90	1.10003 .08977 .07889	0.00 16.05 33.60	1.10982 .10023 .08824	0.00 20.40 34.35	1.11679 .10189 .09209
mo1%	f.t.	E				0.00	1.10003 .08977 .07889 .06497	0.00 16.05 33.60 54.10	1.10982 .10023 .08824 .07345	0.00 20.40 34.35 55.00	1.11679 .10189 .09209 .07706
mo1%	f.t. -14.1 -16.0	E	43.7 44.2	-58.9 -58.4	E -63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25	1.10003 .08977 .07889 .06497 .05627	0.00 16.05 33.60	1.10982 .10023 .08824	0.00 20.40 34.35 55.00 66.30 74.45	1.11679 .10189 .09209 .07706 .06838 .06187
10.5 11.6 14.1	f.t. -14.1 -16.0		43.7 44.2 50.2	-58.9 -58.4 -54.6	-63.2	0.00 17.80 33.90 53.12 64.75 75.25 94.00	1.10003 .08977 .07889 .06497 .05627 .04809 .03277	0.00 16.05 33.60 54.10 74.85	1.10982 .10023 .08824 .07345 .05701	0.00 20.40 34.35 55.00 66.30	1.11679 .10189 .09209 .07706 .06838
10.5 11.6 14.1 18.9 24.9	f.t. -14.1 -16.0 -20.9 -28.3 -41.8	E 	43.7 44.2 50.2 60.9 67.8	-58.9 -58.4 -54.6 -40.7 -45.3	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00	1.10003 .08977 .07889 .06497 .05627	0.00 16.05 33.60 54.10 74.85	1.10982 .10023 .08824 .07345 .05701 .03950	0.00 20.40 34.35 55.00 66.30 74.45	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
10.5 11.6 14.1 18.9 24.9 31.8	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6	- - - -50.8	43.7 44.2 50.2 60.9 67.8 75.3	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4	-63.2	0.00 17.80 33.90 53.12 64.75 75.25 94.00	1.10003 .08977 .07889 .06497 .05627 .04809 .03277	0.00 16.05 33.60 54.10 74.85 96.60	1.10982 .10023 .08824 .07345 .05701 .03950	0.00 20.40 34.35 55.00 66.30 74.45 95.75	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
10.5 11.6 14.1 18.9 24.9	f.t. -14.1 -16.0 -20.9 -28.3 -41.8	- - - -50.8	43.7 44.2 50.2 60.9 67.8	-58.9 -58.4 -54.6 -40.7 -45.3	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00	1.10003 .08977 .07889 .06497 .05627 .04809 .03277	0.00 16.05 33.60 54.10 74.85 96.60 95	1.10982 .10023 .08824 .07345 .05701 .03950	0.00 20.40 34.35 55.00 66.30 74.45 95.75	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
mo1% 10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2	- - - -50.8	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 0.00 14.20 34.20 54.48	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10	1.10982 .10023 .08824 .07345 .05701 .03950	0.00 20.40 34.35 55.00 66.30 74.45 95.75	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
mo1% 10.5 11.6 14.1 18.9 24.9 31.8 34.1	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6	- - - -50.8	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 0.00 14.20 34.20 54.48 63.30	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
mo1% 10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2	- - - -50.8	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 0.00 14.20 34.20 54.48	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40 50	1.11679 .10189 .09209 .07706 .06838 .06187 .04459
mo1% 10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2	- - - -50.8	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 14.20 34.20 54.48 63.30 74.05	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40 50 60 60 70	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1)	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2	-50.8 -51.2	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 14.20 34.20 54.48 63.30 74.05	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90	1.11679 .10189 .09209 .07706 .06638 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1)	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2 (2+3)	-50.8 -51.2 -	43.7 44.2 50.2 60.9 67.8 75.3 90.1	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 14.20 34.20 54.48 63.30 74.05	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40 50 60 60 70 80	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1)	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2 (2+3) mnning, 194 f.t.	-50.8 -51.2 -	43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 14.20 34.20 54.48 63.30 74.05	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1)	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2 (2+3) mning, 194 f.t. 0 -3	-50.8 -51.2 	43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.92 53.12 64.75 75.25 94.00 14.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1)	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2 (2+3) mning, 194 f.t. 0 -3 -8		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 66.20 73.95 95.90	1.10982 .10023 .08824 .07345 .05701 .03950 1.12537 .11350 .11088 .10053 .08540 .07619 .07629	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .06013 .06013
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) ————————————————————————————————————	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -51.2 (2+3) mnning, 194 f.t. 0 -3 -8 -14.5 -24.5	-50.8 -51.2 	43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.92 53.12 64.75 75.25 94.00 14.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 66.20 73.95 95.90	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) Clende	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -49.6 -51.2 (2+3) mning, 194 f.t. 0 -3 -8 -14.5		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 66.20 73.95 95.90	1.10982 .10023 .08824 .07345 .05701 .03950 1.12537 .11350 .11088 .10053 .08540 .07619 .07629	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 40 50 60 70 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .06013 .06013
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) ————————————————————————————————————	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -51.2 (2+3) mnning, 194 f.t. 0 -3 -8 -14.5 -24.5		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95 95.90	1.10982 .10023 .08824 .07345 .05701 .03950 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 20 30 40 50 60 70 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013 .05223
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) ————————————————————————————————————	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -51.2 (2+3) mnning, 194 f.t. 0 -3 -8 -14.5 -24.5		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 34.10 54.30 64.20 73.95 95.90 d	1.10982 .10023 .08824 .07345 .05701 .03950 \$ 1.12537 .11088 .10053 .08540 .07619 .07007 .05252	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40 50 60 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 % 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013 .05223
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) ————————————————————————————————————	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -51.2 (2+3) mnning, 194 f.t. 0 -3 -8 -14.5 -24.5		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 20.00 34.10 54.30 64.20 73.95 95.90	1.10982 .10023 .08824 .07345 .05701 .03950 % 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252 vol%	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 20 30 40 50 60 70 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .08363 .07585 .06803 .06013 .05223
10.5 11.6 14.1 18.9 24.9 31.8 34.1 41.1 (2+1) ————————————————————————————————————	f.t. -14.1 -16.0 -20.9 -28.3 -41.8 -49.6 -51.2 (2+3) mnning, 194 f.t. 0 -3 -8 -14.5 -24.5		43.7 44.2 50.2 60.9 67.8 75.3 90.1 100.0	-58.9 -58.4 -54.6 -40.7 -45.3 -36.4 -22.4 -12.88	-63.2 -63.3	0.00 17.80 33.90 53.12 64.75 75.25 94.00 14.20 34.20 34.20 54.48 63.30 74.05 96.95	1.10003 .08977 .07889 .06497 .05627 .04809 .03277 0% 1.11966 .11030 .09617 .08128 .07292 .06187 .04785	0.00 16.05 33.60 54.10 74.85 96.60 95 0.00 16.20 73.95 95.90 d d 20° 0.9982 1.0197 .0424	1.10982 .10023 .08824 .07345 .05701 .03950 % 1.12537 .11350 .11088 .10053 .08540 .07619 .07007 .05252 vol%	0.00 20.40 34.35 55.00 66.30 74.45 95.75 100 0 10 20 30 40 50 60 70 80 90 100	1.11679 .10189 .09209 .07706 .06838 .06187 .04459 0% 1.12570 .11943 .11287 .10601 .09883 .09137 .06803 .06013 .05223

	1046
Ross, 1954	Skripach and Temkin, 1945
20% 40% 60%	g n _D g n _D
-10 - 1.064 1.094 -5 1.031 .062 .091 0 .030 .061 .088 +5 .029 .059 .086 10 .027 .056 .083 20 .025 .052 .077 30 .021 .047 .071	20° 37 1.3698 84 1.4168 51 .3831 91 4228 68 .4000 97 .4237 73 .4043 99 .4314 76 .4053 100 .4317
Viscosity .	Åkerlöf, 1932
Dunstan, 1904 - 1905	β ε 20° 40° 60° 80° 100°
ж n ж n	
25° 0.00 891 60.84 4488 14.11 1258 69.52 6227 33.11 1621 75.64 9202 45.13 2860 100.00 17330 49.55 3199	0 80.37 73.12 66.62 60.58 55.10 10 77.49 70.29 63.92 58.02 - 20 74.60 67.52 61.20 55.36 - 30 71.59 64.51 58.37 52.59 - 40 68.40 61.56 55.48 49.81 - 50 64.92 58.25 52.30 46.75 - 60 61.08 54.53 48.75 43.68 39.13 70 56.30 50.17 44.98 40.19 35.94 80 50.64 45.45 40.72 36.36 32.52 90 44.91 40.43 36.35 32.58 29.27
Kellner, 1920 Viscosity (see author)	Schwers, 1908
Irany, 1944	% U % U 20° 30° 20° 30°
vol% mol% n vol% mol% n	0 1.000 1.000 60 0.761 0.783 10 0.991 0.988 70 .719 731
20° 0.0 0.0 1005 48.3 22.5 3960 11.95 4.5 1460 67.7 40.4 7100	10 0.991 0.988 70 .719 .731 20 .946 .951 80 .674 .682 30 .897 .909 90 .628 .637 40 .855 .870 100 .563 .591 50 .807 .827
28.0 10.4 2250 79.7 56.9 10300 38.2 16.2 2980 100.0 100.0 21400	% Q mix (cal/g) 17° 32° 55° 76°
llarvey, 1932 8 np 8 np	10 124.14 102.61 94.88 88.74 20 169.91 154.34 140.19 135.69 30 177.59 160.68 148.42 138.50 40 184.34 159.98 144.71 133.93 50 174.12 146.88 133.16 136.99
D D	60 151.71 126.88 133.16 126.88 60 151.71 126.90 115.57 112.51
20° 0 1.3330 60 1.3943 10 .3437 70 .4038 20 .3540 80 .4130 30 .3642 90 .4220	70 101.01 85.30 78.37 78.45 80 83.47 70.49 64.74 64.80 90 41.70 35.23 32.37 32.42
40 .3745 100 .4298 50 .3845	

Water + 1,2-Propyleneglycol (C ₃ H ₈ O ₂)	t U (cal/gr.) 40% 45% 50%
Ross, 1954	1.7 0.90 0.89 0.87
% f.t. % f.t.	1 -1.1 .90 .88 .87
	-3.9 .89 .88 .86 -6.7 .89 .88 .86
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-9.4 .88 .87 .86 -12.2 .88 .87 .86 -15.0 .88 .86 .85 -17.8 .87 .86 .85
1 20 -6.5 60 -51.0	-15.0 .88 .86 .85 -17.8 .87 .86 .85
30 -11.4 68 -66.0	-17.8 .87 .86 .85 -20.6 .87 .86 .84
ے میں اس دی اس در اس میں میں میں اس میں میں اس میں موساط میں اس	-21.7 1.7* -23.3 1.5 0.85 0.84
	-26.1 1.3 0.85 0.84
	-26.1 1.3 0.85 0.84 -27.0 - 1.4* - -28.9 1.2 1.3 0.83 -31.7 1.1 1.2 1.2*
	-28.9 1.2 1.3 0.83 -31.7 1.1 1.2 1.2*
Mc Beth and Thompson, 1951	*melted
% d n _D % d n _D	
35° 25° 35° 25°	
0 0.99406 1.3325 59.32 1.03138 1.3973	W
9.94 1.00086 .3431 69.49 .03297 .4071	Water + 1,3-Propyleneglycol ($C_3H_8O_2$)
# 30 19 01628 3660 89.86 .02987 .4240 I	}
40.14 .02304 .3772 100.00 .02510 .4316 50.04 .02822 .3879	Ross, 1954
	% f.t. % f.t.
Cucken and Manch 1018	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Gucker and Marsh, 1948	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
\$ t U \$ t U	
18.9 -6.58 7.35 30.3 -13.50 2.67 18.9 -7.13 4.88 30.3 -14.43 2.23	
18.9 -6.58 7.35 30.3 -13.50 2.67 18.9 -7.13 4.88 30.3 -14.43 2.23 18.9 -7.80 4.14 30.3 -16.15 1.94 20.1 -7.30 3.64 40.3 -22.66 1.65	
18.9 -7.80 4.14 30.3 -16.15 1.94 20.1 -7.30 3.64 40.3 -22.66 1.65	Water + Diethyleneslysski (C. v. o.)
20.1 -8.26 3.95 40.3 -24.31 1.54 20.1 -9.02 3.06 40.3 -25.45 1.29	Water + Diethyleneglycol ($C_4 H_{10} O_3$)
t U (cal/gr.)	Skripach and Temkin, 1946
20% 25% 30% 35%	% b.t. n _D
میں شدر سے سے سے سے سے لیے لیے لیے لیے لیے اس سے سے سے لیے لیے لیے لیے سے سے سے سے سے سے سے سے سے سے سے سے سے	L V
1.7 0.96 0.94 0.93 0.92 -1.1 .95 .94 .92 .91 -3.9 .95 .93 .92 .91 -6.7 .94 .93 .92 .90 -6.9 6.0* -	76 mm 20°
$\begin{bmatrix} -3.9 & .95 & .93 & .92 & .91 \\ -6.7 & .94 & .93 & .92 & .90 \end{bmatrix}$	33 0 46 1.3685
-6.7 .94 .93 .92 .90 -6.9 6.0*	61 0 49 .3992
-9.4	78 0 54 .4205
-12.2 2.1 2.4 0.90 0.90 -12.9 2.6* -	91 0 64 .4357
-12.9 2.6* 2.6* 2.6*	99 18 108 .4450
-15.0 1.6 1.9 2.2 0.89 -17.8 1.3 1.5 1.7 2.0* -20.6 1.1 1.3 1.5 1.6	99-100 49 132 .4470 99-100 77 154 .4470
-23.3 1.0 1.1 1.3 1.4	
- <u>28.9 </u>	
-31.7 0.8 0.8 0.9 1.0	در پی مقد خود در مورد کرد. در در در در در در در در در در در در در
و بين الله موجوع بين الدر الدر الدر الدر الدر الدر الدر الدر	

Water + Diethyleneglycol monoamyl ether (C ₉ H ₂₀ O ₃) Chakhovskoy, 1956 ** sat.t.	Water + Triethyleneglycol monohexyl ether (C ₁₂ H ₂₆ O ₄) Chakhovskoy, 1956 Sat.t. Sat.t. 4.30 39.50 50.00 50.00 7.30 39.50 59.40 56.50 10.20 39.50 73.00 79.20 27.60 41.75 80.00 higher than 100 40.00 45.35 C.S.T.: 10% 38.6°
Water + Diethyleneglycol monohexyl ether(C ₁₀ H ₂₂ O ₃) Chakhovskoy, 1956 **Sat.t. **Sat.t.	Water + Triethyleneglycol monooctyl ether (C ₁₄ H ₃₀ 0 ₄) Chakhovskoy, 1956
0.94 15 35.25 7.4 3.44 lower than 0 45.08 12.5 6.99 54.78 18.2 11.97 63.31 28.0 15.47 73.18 57.0 18.07 84.70 higher than 100	\$\begin{array}{cccccccccccccccccccccccccccccccccccc
Water + Triethyleneglycol (C ₆ H ₁ ,0 ₄) Wise, Puck and Failey, 1950	Water + Tetraethyleneglycol monohexyl ether ($C_{14}H_{30}O_{5}$)
P ₂ P ₁ P ₂ P ₁ P ₂ P ₁	Chakhovskoy, 1956
20° 25.03° 29.05°	% sat.t. % sat.t.
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.31 62.0 29.98 61.0 3.49 59.5 35.73 62.0 5.48 59.5 40.86 63.5 7.67 59.8 44.02 64.5 8.97 60.0 47.70 66.5 11.48 60.0 52.17 69.5 14.98 60.0 57.55 74.0 20.42 60.5 67.32 90.0 C.S.T.: 15% 60°

11	2.04 atm. 4.42 atm.
Water + Tetraethyleneglycol monooctyl ether ($C_{16}H_{34}O_{5}$)	135.0 1.46 0.308 154.5 0.291 0.0715 2.66 0.585 0.670 0.176 5.05 1.10 2.67 0.692
Chakhovskoy, 1956	1 10.50 2.19 4.10 1.03 1
% sat.t. % sat.t.	15.10 2.82 8.37 2.03 16.90 3.26 8.58 2.21
0.78 36.5 38.98 48.5 2.42 36.1 45.49 52.4 5.08 35.9 51.60 56.8 10.46 36.3 57.17 61.8 15.19 36.8 62.57 67.3 28.28 41.7 66.90 73.0 31.27 43.3 71.74 79.7 36.17 46.0	19.50 3.62 156.0 13.5 3.44 21.40 4.01 13.5 3.27 136.0 24.80 4.61 16.8 3.90 37.50 6.40 19.1 4.34 40.20 7.20 19.3 4.57 41.00 7.10 156.5 20.2 4.49 50.00 8.60 25.0 5.28 138.0 61.1 10.60 27.8 5.45 139.5 66.2 11.90 29.7 5.95
C.S.T. : 5% 35.5°	149.7 68.5 12.80 33.9 7.80 151.6 73.5 14.60 40.4 8.90 155.0 76.7 16.20 44.7 9.70
	157.8 44.9 10.0
Water + Pentaethyleneglycol monooctyl ether ($C_{18} H_{38} \theta_6$)	159.6 60.8 11.8 160.2 64.0 12.6 170.5 66.3 12.9 172.2 72.0 15.0
Chakhovskoy, 1956	
% sat.t. % sat.t.	
0.50 75.0 19.80 57.0	Othmer, Shlechter and Koszalka, 1945
0.75 56.0 26.80 58.4 1.00 55.5 39.21 62.0	% b.t. % b.t. L V L V
5.00 55.0 50.00 68.0 7.50 55.0 58.40 77.0 10.00 55.5 63.60 94.0	760 mm 500 mm
C.S.T. : 7.5% 55.0°	3.70 31.75 172.0 2.90 33.60 155.4 6.00 42.00 167.2 4.00 42.70 153.4
	10.00 57.00 158.6 9.50 63.00 144.0
Water + 2,3-Butylene glycol m ($C_{4}H_{10}O_{4}$)	15.75 70.80 149.6 14.70 75.50 136.1 26.70 87.50 132.0 31.90 93.00 111.4 48.80 96.60 110.6 56.90 98.70 95.2 62.00 98.00 106.0 79.40 99.00 91.7 71.50 98.50 104.6 88.00 99.40 89.7 81.40 99.00 102.4 92.70 99.60 89.2
Blom, Mustakas and al., 1945	350 mm 200 mm
t % t %	4.85 55.69 140.0 4.85 60.70 126.0 8.30 64.90 135.8 8.30 69.70 119.6
L V L V 750 mm 127 mm 100.0 0.231 0.0244 58.4 0.423 0.0142 0.530 .0535 0.700 .0244 1.06 .112 58.5 1.34 .0430	15.00 80.00 123.0 12.69 82.40 109.5 19.16 87.20 115.4 27.70 94.60 86.4 25.70 92.00 105.8 46.30 97.60 73.6 47.50 97.40 87.6 66.20 98.70 69.4 66.20 98.70 83.6 82.30 99.20 68.3 80.60 99.00 81.2 87.70 99.40 67.8 91.20 99.10 79.4 94.50 99.50 67.2
2.00 .226 4.58 .153 4.28 .470 5.05 .160 6.90 .733 14.70 .500	* n _D % n _D
8.84 .920 59.0 15.8 .460 100.5 10.8 1.09 30.1 .900 15.2 1.45 60.4 40.6 1.60	24°
101.0 27.6 2.68 58.7 2.92 101.8 40.7 3.40 63.0 69.0 3.16 50.7 4.57 69.7 3.56 103.0 58.2 5.95 64.0 73.7 4.10 69.4 7.66 71.0 85.5 8.20 105.0 70.0 70.0 74.0 91.6 15.2	0 1,3330 50,00 1,3930 9,21 3435 51,97 3960 17,01 3530 55,03 3990 23,63 3610 57,90 4020 29,12 3680 62,15 4070 33,66 3740 64,90 4100 38,26 3825 70,52 4111
106.0 73.7 8.40 81.0 93.3 19.0 109.3 87.6 11.80 92.0 93.6 40.9 113.4 90.3 16.80 106.2 96.2 63.4 117.0 92.9 22.50 118.0 98.6 79.3 134.8 95.7 45.70 158.5 98.8 46.1	41.90 .3850 76.10 .4190 45.01 .3880 82.53 .4250 47.75 .3915 91.13 .4310 49.86 .3930 100.00 .4366
2007	- A CO CO CO CO CO CO CO CO CO CO CO CO CO

Water ·	+ 2,3_Buty	lene glyco	1 1 (C ₄ H _{1 c}	50 ¹⁴)	Water	+ 2-Me1	thy 1-2,	4-pentai	nediol (C ₆ H _{1 4}	0 ₂)	
	on Sahiali	ta and Mad	M:llan 104	16	Ross,	1954						
l	on, schief		Millan, 194		- %	f.1	t.	%	f.t.			
% (L)	200 min	400 mm	(V) 600 mm	800 mm	0	0 -1.		40 50	-11.0 -13.6			
99.0 98.0 96.0	89.6 80.2 63.5	89.8 77.2 58.2	89.4 77.6 55.3 42.0 33.3	90.9 77.2 56.6	20 30	-4 -7;	.0 .4	60 70	-15.8 -18.5			=====
94.0 92.0 90.0 85.0 80.0	51.2 37.6 23.6 9.1 5.7	43.9 32.7 23.9 12.0 6.9	26.4 14.2 8.3	44.0 34.1 26.5 14.6 8.5	Water	+ Pinace	o1 (C ₆	Н ₁₄ 0 ₂)		امر هم م ن اب ا مر من		
70.0 60.0 50.0	4.4 4.2 3.8	4.8 4.4 4.4	5.8 5.4 5.0	5.8 5.6 5.5	Pushin	and Gla	agoleva	, 1922				
40.0 30.0 20.0	3.2 2.5 1.8	4.0 3.2 2.4	$\frac{4.6}{3.9}$	5.0 4.4	mo1%	f.t.	E	min.	mo1%	f.t.	E	min.
10.0 5.0	0.9 0.4	2.4 1.2 0.8	$\frac{3.0}{1.8}$	3.4 2.1 1.1	0.5	0 16.7 22.4	-0.45	-	$\frac{31.1}{34.3}$	$\frac{43.3}{41.8}$	40.2	-
%	200 mm	b. 400 mm	.t. 600 mm	800 mm	0.79 0.86 1.3 2.0 2.2	22.0 28.0 33.8	-0.5	- - 3.0	36.5 37.8 39.6 40.0 42.0	40.7	40.0	2.0 1.9
0.0 2.87 10.40 21.59 39.26 60.21 80.44 90.18 96.32 100.00	66,44 66,65 66,89 67,42 68,42 70,55 75,88 87,72 106,51 140,07	82.96 83.07 83.38 83.96 84.98 87.02 92.99 104.99 125.51 159.09	93.51 93.61 93.97 94.52 95.60 97.68 104.30 116.32 137.70 171.37	101.44 101.53 101.95 102.54 103.55 105.78 112.59 124.88 147.02 180.70	2.7 3.6 5.1 5.5 6.5 8.0 9.6 11.6 12.7 14.27	34.7 37.4 46.2 42.6 43.2 43.7 44.9 45.2 45.3 45.4	-0.5 -0.6 -0.4 -0.6 -0.7 -0.7 -1.0	0.9	45.0 50.0 53.3 57.5 63.7 64.8 70.8 75.0 76.4 80.4	41.2 41.25 41.2 41.0 39.4 39.5 36.6	27.2 28.2 27.9 29.2 29.3 29.3	-
					14.34 17.0 19.5	45.4 45.3 45.2		0.2	82.8 86.2 87.0 93.4	30.2 32.4 33.2	29.1 29.3	- 35 -
% 	n _D	% 	n _D		21.9 24.6 29.1	45.1 44.8 43.7	37.8 40.1 40.2	$0.6 \\ 1.0 \\ 1.2$	93.4 97.0 100	38.6 39.7 41.1	-	-
0.0	1,3324	5° 58.3	1.4010				+1)	(1+6)		11.1		
8.9 11.6 21.9 32.9 45.0	.3430 .3462 .3521 .3727 .3865	71.0 83.0 90.7 100.0	.4121 .4206 .4257 .4309		=======================================				=======		====	

	Drucker and Moles, 1910
Water + Glycerol (C ₃ ll ₈ O)	g p g p
lleterogeneous equilibria	25°
Iyer and Usher, 1925	0 23.8 60 14.8
g at b.t. g	15.5 23.0 75 10.5 25 22.0 83 8.0
L V L V	35 20.2 92 4.0 50 17.4 98 0.4
75 0.2 92 0.65 80 .3 93 .70 85 .4 94 .75 86 .45 95 .85 87 .45 96 .95 88 .50 97 1.20 89 .55 98 1.70	
85 4 94 .75 86 .45 95 .85 87 .45 96 .95	
86 .45 96 .95 87 .45 96 .95 88 .50 97 1.20 89 .55 98 1.70 90 .55 99 17.00	Perman and Price, 1912
90 .55 99 17.00 91 .60 100 100.00	c mo1% p
	$\begin{bmatrix} & & & & & & & & & & & & & & & & & & &$
	11.74 2.52 229.3-232.5 12.04 2.59 229.1-229.6 22.21 5.12 222.4-222.3 48.96 13.80 200.4-199.4
Corlesh 1994	48.96 13.80 200.4-122.4 68.85 23.55 173.1-173.8
Gerlach, 1884 % p % p	68.85 23.55 173.1-173.8 90.18 40.10 128.1-128.2 105.71 58.99 80.3- 79.3
100°	,
100 64 79 408	
99 87 .78 419 98 107 77 430 97 126 76 440	Stedman, 1924 and 1928
99 87 78 419 98 107 77 430 97 126 76 440 96 144 75 450 95 162 74 460 94 180 73 470 93 198 72 480	t wt% (V) mo1% (V) p ₂
94 180 73 470 93 198 72 480 92 215 71 489	760 mm
91 231 70 496	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
90 247 65 553 89 263 60 565 88 279 55 593	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
89 263 60 565 88 279 55 593 87 295 50 618 86 311 45 639 85 326 40 657	150 2,135 .4251 3,2310 160 3,865 .7806 5,9330 180 10,630 2,2750 17,2900
84 340 35 675	200 22.980 5.5170 41.9300
82 370 25 704	660 mm 100 0.023 0.0045 0.0297
81 384 20 717 80 396 10 740 0 760	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
700	130 .693 .1364 .9001 140 1.380 .2731 1.8020
	160 4,710 .9580 6.3230
	170 7.810 1.310 10.7600 180 12.140 2.350 17.3900 190 18.000 4.1190 27.1800
Dieterici, 1898	200 25.910 6.4050 42.2700
	560 mm 100 0.047 0.0092 0.0515
0° 0 4.579 9.581 3.787	110 .165 .0323 .1811 120 .412 0800 4520
0 4.579 9.581 3.787 2.309 432 20.160 3.113 5.581 .125 39.510 2.305	130 .863 .1701 .9523 140 1.695 .3363 1.8830
	160 5.635 1.1551 6.4680
	180 14.130 3.1260 17.5800
	200 29.530 4.8990 27.4400 200 29.530 7.5790 42.4400

		60 mm								
90 100 110	0.012 .095 .245	0.0023 .0186 .0480 .1085 .2216 .4261 .8130 1.4208 2.3870 3.8540 6.0260 9.3030	0.0108 .0856			e, 19 27	مند الدو الدو الدو الدو الدو الدو الدو الد		ند جي دين جي لين شب البد البدا	
120 130	.552 1.122 2.140	.1085 .2216	.4991 1.0192		mol%	0°	p 15°		0°	
140 150 160 170	4.020 6.860 11.100	.4261 .8130 1.4208 2.3870	3.7400 6.5360	!	84.4 72.2				2.529 2.748	7.151 7.767
180 190 200	11.100 17.000 24.680 34.390	3.8540 6.0260 9.3030	17.7300 27.7200 42.7900		60.6 52.5 46.3	1.349 1.724 2.029 2.294	1.320 2.625 3.929 4.931 5.761	26.4 22.1 82.1	3.086 3.328 3.558	8.709 9.396 10.047
	ę	360 min			41.3	2.294	6.483			
90 100 110 120 130	0.037 .167 .352 .759 1.530 2.890 5.230	.0327	0.0261 .1178 .2488 .5380 1.0914 2.0840 3.8460 6.6640		Fricke	:, 19 2 9		ہے کے حصر الحدر خدید الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد	م میں سے است است است است است است است است است است	
140 150 160 170	5.230 8.790 14.120 21.260 30.310	1.0684 1.8510 3.1170	3.8460 6.6640 11.2200 18.0700				15°			15°
180 190 2 00	30.310 41.000	7.8440 12.0000 260 mm	28.2400 43.1900				0.793 1.600 3.365 4.512 5.405			
80	0.029	0.0057	0.0148		56.5 50.0	1.580 1.907	4.512 5.405	27.5 23.1	$\frac{3.081}{3.313}$	8.621 9.261
90 100 110 120 130	.097 .272 .545 1.130 2.180	0.0057 .0190 .0533 .1071 .2232 .4342 .8432 .5022 .2.6450 4.3750 7.0390 10.9700 16.8700	. 0494 . 1387 . 2785 . 5802 1. 1290 2. 1930 3. 9080			e, 1929	رجد ويل احدر احد احد احدر شد ويدر آدار من احدود احدود احداد احدر شدر احدر احد			
140 150	7.230	1.5022	3.9080		mo1%	p	mo1%	p,		
160 170	18.950	4.3750	6.8760 11.3760			<u>-</u> 3 7()°			
180 190 200	J	lou mm	18.3000 28.5100 43.8700		59.0 40.1 23.6 13.8	79.8 128.1 173.4 199.9	5.7 2.6 2.3 0.0	222. 229. 230. 233.	3 3 9 8	
70 80 90 100 110 120	0.025 .074 .234 .543 .996 1.960 3.800 6.750 11.670	0.0049 .0145 .0459 .1067 .1965 .3897 .7671 1.3967 2.5200 4.3890 7.2060 18.3900 27.8900	0.0078 .0232 .0734 .1708 .3144 .6235 1.2273 2.2350 4.0320 7.0220		Darke	and Lewi	is, 1931		نے میں سی سیاسی شد شد است	
130 140	3.800 6.750	.7671 1 3067	1.2273				%	D		
150 160	11.670 19.000	2.5200 4.3890	4.0320 7.0220							
170 190 200			7.0220 11,5300 29.2700 44.6200		0 15.5 25	23.7 23.0 22.0	60 75 83 92 98	14. 10. 8.	8 5 0	
50		60 mm	0.0017		50	17.4	98	0.4	¥	
60 70 80 90 100 110	.033 .103 .285 .707 1.525 3.160	0.0027 .0065 .0202 .0559 .1391 .3021 .6345	0.0016 .0039 .0171 .0385 .0835 .1812 .3807		an pangangan ayan asa asa asa asa asa asa asa asa asa a	ن شیخ شدر خورد شده شده شده است کار	ست امن التي سال التي التي التي التي التي التي التي ال	انت داند داند داند داند ادان ادان داند همه داند داند داند داند داند داند	ان بادین کاربر کنید دادی دادید بادید در کنین کاربر کاربر کاربر کاربر کاربر دادید	
120 130 140 150 160 170	10.330 17.390 27.360 41.640 56.360	2.2047 3.9560 6.8650 12.2520 20.0900	.6699 1.3228 2.3740 4.1190 7.3510 12.0540							
180	70.390	31.7500	19.0600	=====						

Dulitska	iya, 1945					Mayer	-Bugstro	n, 1924			
mo1%	р	mol%	р	mol%	р	%			b.t.		
2 5°		50°		75		p	40	100	150	200	250
0.00 3.14 14.88 20.26 28.52 51.16 100.00	$\frac{18.0}{15.5}$	0.00 3.14 14.88 19.67 29.70 41.61 48.68 51.16 54.33	92.5 85.3 74.2 70.0 59.3 46.5 39.0 36.0 35.5	0.00 3.14 14.88 20.26 29.70 41.61 51.16 54.33	289.0 274.0 237.0 222.5 190.0 151.3 122.0 115.5	0 10 20 30 40 50 60 70 80 90	34.0 34.4 34.9 35.5 36.4 37.5 39.5 44.0 49.1 59.5 210.0	51.6 52.1 52.7 53.4 55.7 58.0 61.7 68.2 80.2 227.3	60.1 60.7 61.3 62.1 63.1 64.5 66.9 70.8 77.4 90.3	66.4 67.0 67.7 68.6 69.5 71.1 73.5 77.6 84.3 97.7 246.4	71.6 72.3 73.0 73.8 74.9 76.4 79.0 83.1 90.0 103.9 253.6
Gerlach	1, 1884										
%	b.t.	%	b	.t.		p	300	350	400	450	500
100 90 80 70 60	290 138 121 113.3 109	50 40 30 20 10 0	1 1 1 1	06 04 02.8 01.8 00.9		0 10 20 30 40 50	75.9 76.6 77.3 78.2 79.3 80.9 83.5 87.7	79.6 80.3 81.1 82.0 83.1 84.8 87.4	83.7 84.4 85.3 86.4	90.3 91.3 92.4 94.2 97.0	85.9 86.7 87.5 88.4 89.5 91.3 94.1
8	b.t.	Я	b.	t.	، مدر دسم شدم شدن فهار جنام کنن کنور میس میس	70 30	94.6	87.4 91.7 98.7	95.2 102.3 117.4 268.2	101.4	98.4 105.6
		760 mm				90 100	109.1 259.2	113.5 264.3	268.2	124.4 275.7	121.0 272.1
100 99 98 97 96	290 239 208 188 175	79 78 77 76 75]	20 19 18.2 17.4		p 0	550 91.2	93.5	650 95.7		760 100.0
99 98 97 96 95 94 93 92 91 90 88 87 86 85 84 83 82	164 156 145 141 138 135 132,5 130,5 129 127,5 126	78 77 76 73 74 73 71 70 65 55 40 35 30		116 115.4 114.8 114.2 113.6 111.3 09 07.5 06 05 04 03.4		10 20 30 40 50 60 70 80 90 100	92.0 92.9 93.8 95.0 96.8 99.7 104.1 111.4 127.4 278.8	94.3 95.2 96.2 97.3 99.2 102.1 106.6 113.9 130.2 282.8	97.4 98.4	99.5 106.4 101.7 103.6 106.6 111.1 118.5 135.2	100.9 101.8 102.8 104.0 106.0 109.0 113.6 121.0 138.0 290.0
82 81 80	123 122 121	25 20 10	1	02.8 02.3 01.8 00.9		Darke	and Lew	ris, 1931			
	ر نمر نمو نمو	دہ آئی جی جی جی لیے لیے لیے انہے کے	بر این میں اور اور اور اور اور اور اور اور اور اور	امي شين سين امن الله الله الدور ا رخين مين مين مسر الله آبان شين ا		%	760 mm	b.t 303	mm	92.3 mm	
Lewis,	1922					100	2 90				·
%	b. t.	% %	b.t.	%	b. t.	95.14 90.0	165.0 137.5	143. 115. 98.	0	103.0 80.0	
100 99 98 97	290.0 225.5 196.0 179.5	760 90 85 80 75 70	137.5 126.8 121.5 116.3	30 25	104.2 103.5 103.0 102.4	80.0 70.0 60.0 50.0	121.5 113.5 108.8 106.0		0	66.2 61.2 57.8 55.2	
97 96 95 94 93 92 91	168.0 160.0 156.0 149.5 145.5 141.0	70 65 60 55 50 45	113.5 111.0 108.8 107.2 106.0 105.5	20 15	102.4 102.0 101.5 101.0 100.5						

Fabian, 1860			Lane, 192	:5		
% f.t.	% f.t.		%	f.t.	Z	f.t.
10 -0.8 4 20 -1.6 4 30 -4.0 5		.6	11.5 22.6 33.3 44.5 53.0	- 2.0 - 6.0 -11.0 -18.5 -26.0	67.1 67.3 68.0 70.9 75.4	-45.5 -44.5 -44.0 -37.5 -28.5
Guthrie, 1876 % f.t.	% f.t.		60.4 64.0 64.7 65.6 66.0 66.7	-35.0 -41.5 -42.5 -44.5 -44.7 -46.5	79.0 84.8 90.3 95.3 98.2 100.0	-22.0 -10.5 - 1.0 + 7.5 +13.5 +17.0
			Bureau of	'Standards	, 1925 f.t.	
Abegg, 1894 M f.t.	M f.t.		11.7 22.8 33.4 43.4 53.0		-2.0 -6.0 -11.0 -18.0 -26.0	
1.028 -2.12 2	.32 -5.59 .54 -6.34 .81 -11.15	R	loss, 1954	1		
			%	f.t.	%	f.t.
	and Getman, 1904 d f.t. -12.00		10 20 30 40	-2.4 -5.2 -9.3 -15.0	50 60 66.7	-23.4 -35.6 -48.5
0.4 -1.65 2 0.8 -3.75 2 1.2 -6.00 3	.4 -16.50 .8 -21.00 .2 -26.50 .6 -36.00					
Pushin and Glagoleva,	1922					
mol% f.t.	E min.					
73.5 - 4.8 64.9 - 1.3 - 54.0 - 4.3 - 42.0 - 14.7 - 33.6 - 18.5 - 20.0 15.0 - 21.0 -	7.7 0.1 27.7 0.2 27.7 0.2 27.7 0.3 28.0 0.5 31.0 0.7 28.2 0.5 28.0 0.5					

Prope	erties of	hases .	Density .				ttner, 1					
l						%		d		%		đ
Fabia %	an, 1860	×	đ	%	đ	100 94. 89. 80.	94	1.258 1.243 1.232 1.207	91 11	74.97 65.68 47.96	1.1	9366 6909 2257
 -			7.5°			==						
10 20 30 40	1.023 1.050 1.074 1.104	45 50 60 70	1.116 1.126 1.158 1.178	80 90 94 100	1.203 1.231 1.240 1.259	Emo.	, 1881 d		%	đ		
						<u> </u>		0°				
van d	der Willig	en, 1869	Į.			0 1 2 5 8	0.999 1.002 .004 .012	987 21 45	50 55 60 65	1.1317 .1456 .1597 .1731		
0 49.69 68.76	1.	·	20° 80.79 100		d 1.19285 1.24049	10 15 20 25 30 35	.024 .037 .050 .064	14 71 04 11 59	70 75 80 85 90 95	.1872 .2011 .2160 .2286 .2424 .2558 .2637		
						40 45	.090 .104 .118	18 1	100	.2688		
Lenz,	1880							·····				
%	đ	%	đ	K	ð							
100	1 2/03		14°	•	1 00		ch, 1881					
100 99	1,2691 ,2664	66 65	1.1764 .1733	33 32 31	1.0852 .0825	t	0.4	10 4		d 20.4	40 4	
98 97 96 95 94 93 92 91 90 89 88 87 86	.2637 .2610 .2584 .2557 .2531 .2504 .2478 .2451 .2425 .2398 .2372 .2345 .2318	64 63 62 61 60 59 58 57 56 55 54 53 52 51	.1702 .1671 .1640 .1610 .1582 .1556 .1530 .1505 .1480 .1455 .1430	31 30 29 28 27 26 25 24 23 22 21 20 19	.0798 .0771 .0744 .0716 .0689 .0663 .0635 .0608 .0580 .0553 .0525	0 10 20 30 40 50 60 70 80 90	.9998 .9983 .9957 .9923 .9882 .9834 .9777	10 % 1.0266 .0255 .0235 .0205 .0168 .0128 .0076 .0020 0.9965 .9897 .9832	20 % 1.0527 .0506 .0480 .0445 .0406 .0359 .0306 .0247 .0188 .0123	.0756 .0721 .0679 .0631 .0579 .0528 .0468 .0403 .0343	40 \$ 1.1064 .1031 .0990 .0942 .0889 .0835 .0777 .0714 .0655	50 % 1.1346 .1307 .1260 .1206 .1150 .1090 .1031 .0966 .0904 .0840
85 84	.2292 .2265	51 50	.1375 .1348	18	.0471	1200	60		.0049 0 %	0273 80 %	.0517 90 %	.0769 100 %
85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67	.2238 .2218 .21185 .2159 .2122 .2106 .2079 .2042 .2016 .1973 .1945 .1889 .1858 .1858 .1858	50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34	.1320 .1293 .1265 .1238 .1210 .1183 .1155 .1127 .1100 .1072 .1045 .1017 .0989 .0962 .0934 .0907 .0880	17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	.0442 .0398 .0374 .0349 .0332 .0297 .0271 .0245 .0221 .0196 .0172 .0147 .0123 .0098 .0074 .0049 .0025	0 10 20 30 40 50 60 70 80 90 100	1.162 1.153 1.154 1.144 1.133 1.129 1.120 1.110	27 1.3 33 .3 30 .3 74 .3 15 .3 56 .1 24 .3		80 % 1.2180 .2110 .2069 .2007 .1943 .1886 .1830 .1740 .1679 .1626 .1562	90 % 1.2455 .2400 .2338 .2274 .2207 .2146 .2079 .2015 .1948 .1804	1.2711 .2655 .2598 .2536 .2473 .2422 .2333 .2291 .2207 .2146 .2069

Strolu	ner, 1884					Traube,	1885			
%	, d	FL.	d]				
	11	7.5°				С		d		
100 99 93 97 96 95	1.260 .257 .255 .252 .250 .247	74 73 72 71 70 69 68 67 66	1.19 .10 .11 .11 .11	89 86 83 80 77		5 10 20	15°	1.0103 .0207 .0403		
93 92 91	.242 .239 .237	67 66 65	.1: .1: .1:	71 68 65		Nicol,	1887			
90 89	.234 .231	63	.1.	58		%	d	%	đ	
89 87	.229 .226	62 61	.1:	52			2 0°			
86 85 84 83 82 81 80 79 78 77	.224 .221 .218 .216 .213 .211 .208 .205 .202	65 64 63 61 60 59 57 56 55 54 53 50	.14 .14 .14 .13 .13 .13	47 44 42 40 38 35 33		100 90 80 70 60 50	1.26124 .23500 .20795 .18083 .15356 .12631	40 30 20 10 0	1.09923 .07279 .04698 .02209 0.99823	
77 76 75	.200 .197 .194	50	.12	6		Gerlach	, 1889			
						78	đ	%	đ	_
Skal	weit, 1885						15°			
<u> %</u>	đ	%	đ	%	d	0 9	0.99913 1.02116	45 90	1.1145 .2389	
		15				18	1.04320	100	. 2642	
0 1 2 3 4 5	0.9991 1.0015 .0039 .0063 .0087 .0111	33 34 35 36 37 38	1.0822 .0848 .0875 .0902 .0929	67 68 69 70 71 72 73	1.1761 .1789 .1817 .1845 .1872 .1899	Heimbro	odt, 1903 d	N	d	
6 7	.0135 .0159	39 40	.0956 .0983 .1010	73 74	.1923 .1953		14.			
0 1 2 3 4 5 6 7 8 9 10 11 12 14 15 15	.0183 .0207 .0231 .0276 .0281 .0306 .0311 .0376 .0381	41 42 43 44 45 46 47 48 49 50	.1037 .1064 .1091 .1118 .1145 .1172 .1199 .1226 .1253	75 76 77 78 79 80 81 82 83	.1979 .2006 .2033 .2060 .2087 .2114 .2141 .2168 .2195	0 0,125 ,250 ,375 ,500 ,625 ,750	0.99917 1.00161 .00409 .00659 .00911 .01163 .01416	0.875 1.000 1.250 1.500 1.750 2.000	1,01671 .01938 .02458 .02982 .03509 .04038	
18 19 20 21 22	.0431 .0476 .0481 .0507 .0533	51 52 53 54 55	.1308 .1336 .1364 .1392 .1420	85 86 87 88 89	.2258 .2276 .2303 .2334				etman, 1904	
23 24	.0559	56 57	.1448	90 91	.2357	<u> </u>	d a	M	d	
24 25 26 27 28 29 30 31 32	.0585 .0611 .0657 .0663 .0689 .0715 .0741 .0768	57 58 59 60 61 62 63 64 65 66	.1476 .1504 .1532 .1560 .1589 .1618 .1647 .1676 .1705	91 92 93 94 95 96 97 98 99	.2410 .2436 .2462 .2488 .2514 .2539 .2564 .2589 .2614	0 0.2 0.4 0.8 1.2 1.6	0°999868 1.008040 .013404 .032220 .049024 .06662 0	2.0 2.4 2.8 3.2 3.6	1.081352 .097760 .113376 .127204 .142320	
										

Herz and Knoch, 1905	Drucker and Moles, 1910
% d % d	% d % d .
25° 0 0.9971 45.36 1.1087 7.15 1.0193 54.23 .1334 13.28 .0279 69.20 .1738 25.98 .0587 83.84 .2112 31.55 .0737 100.00 .2555	25° 0 0.9971 60 1.1536 15.5 1.0350 75 .1934 25 .0589 83 .2163 35 .0854 92 .2395 50 .1257 98 .2574
Henkel and Roth, 1905	Campbell, 1915
[%] 15° do° 25°	% d % d
0 0.99913 0.99823 0.99703 4.9905 1.01116 1.01005 1.00875 9.9338 .02326 .02203 .02057 14.8970 .03553 .03415 .03257 19.3306 .04704 .04542 .04381	0 0.9852 49.73 1.1062 2.85 0.9935 57.19 1.266 10.01 1.0090 62.08 1.393 29.49 .0558 82.35 1.929 33.46 .0654 95.64 .2279 40.00 .0815 100.00 .2400
Cheneveau, 1907	Lewis, 1922
% d	% d 15° 20° 25° 30°
18° 0 0.9986 16.13 1.0371 53.74 .1354 64.67 .1665 100 .2628	5 1.0113 1.0103 1.0084 1.0065 10 .0236 .0223 .0204 .0183 15 .0361 .0344 .0325 .0305 20 .0486 .0475 .0451 .0429 25 .0612 .0595 .0574 .0555 30 .0744 .0732 .0706 .0683 35 .0896 .0865 .0837 .0815 40 .1013 .1001 .0973 .0946 45 .1146 .1136 .1110 .1083 50 .1280 .1267 .1243 .1216
Strong, 1908 % d % d	% d 35° 40° 45° 50°
15° 0 0.9991 60 1.1392 10 1.0286 70 .1849 20 .0672 80 .2131 30 .0880 90 .2319 40 .1084 100 .2588 50 .1330	5 1.0043 1.0019 0.9994 0.9967 10 .0160 .0135 1.0109 1.0082 15 .0285 .0259 .0234 .0205 20 .04405 .0378 .0352 .0322 25 .0531 .0503 .0476 .0446 30 .0658 .0632 .0610 .0570 35 .0789 .0760 .0732 .0700 40 .0922 .0793 .0863 .0830 45 .1059 .1029 .0998 .0963 50 .1187 .1152 .1120 .1086

Muller, 1924	Bosart and Snoddy, 1927
t d t d	% d 15° 15.5° 20° 2 5°
99.19% 81.98%	
15 1.2622 17 1.2178 18 .2604 18 .2172 30 .2531 20 .2160	97.5 .25062 .25737 .25463 .25158 95 .25118 .25093 .24824 .24513
40 .2470 30 .2098 50 .2408 40 .2035	90 .23801 .23774 .23508 .23197 80 .21150 .21117 .20850 .20545
60 .2341 50 .1973 70 .2276 60 .1908	70 .18403 .18382 .18123 .17840 60 .15639 .15616 .15379 .15105 50 .12861 .12846 .12628 .12374
90 ,2136 80 ,1772	40 ,10135 ,10127 ,09930 ,09708 30 07447 ,07434 ,07270 ,07069
90 .1705 61.44% 39.31%	20 .04830 .04826 .04688 .04525 10 .02316 .02314 .02209 .02069
15 1.1600 18 1.0979 20 .1573 30 .0923	
30 .1517 40 .0871 40 .1459 50 .0817	Sheely, 1932
60 .1335 70 .0698	% d % d
70 .1272 80 .0646 80 .1208 90 .0569 90 .1143	25°
20.29% 0%	$ \begin{array}{ccccccccccccccccccccccccccccccccccc$
15 1.0486 20 0.9983 18 .0478 30 .9958 20 .0472 40 .9927	10.58 .02216 75.69 .19403 14.13 .03090 77.71 .19950 17.40 .03892 79.37 .20410
ll 30 .0438 50 .9883 l	19.79 ,04480 80.83 .20790
I 50 .0354 70 .9779 I	1 27.98 .06561 84.27 .21703 I
70 .0242 90 .9653 80 .0179	1 33 11 07901 86.56 .22311 1
90 .0113	39.02 .09459 89.89 .23195
	44.78 .10996 92.19 .23802 48.20 .11910 92.82 .23969 51.33 .12753 93.70 .24198
Herz and Wegner, 1925	1 54.10 .13509 94.32 .24366 1
t d	1 58 74 . 14778 90.00 . 24020 1
10% 20% 30% 40%	58,74 .14778 96.08 .24820 59,74 .15051 96.48 .24921 61,46 .15526 96.89 .25029 61,46 .15526 96.89 .25029
10 1.0237 1.0491 1.0754 1.1028 15 .0227 .0481 .0741 .1009	62.50 .15807 98.06 .25333 64.50 .16356 98.84 .25535 64.66 .16399 99.66 .25743 66.94 .17025 100.00 .25831
$egin{array}{cccccccccccccccccccccccccccccccccccc$	66.94 .17025 100.00 .25831
40 .0152 .0392 .0637 .0897 50 .0109 .0347 .0589 .0843 60 .0067 .0301 .0540 .0790	
70 .0012 .0245 .0487 .0733 80 0.9953 .0184 .0422 .0673	
90 0.9894 .0124 .0357 .0606	Langmuir, 1932
50% 60% 70.04% 79.95% 10 1.1314 1.1586 1.1864 1.2139 15 .1291 .1564 .1838 .2111	% d % d
20 .1268 .1538 .1814 .2083	15.56°
40 .1167 .1428 .1701 .1966 50 .1110 .1370 .1641 1906	100 1.26412 60 1.15631 95 .25123 50 .12862 90 .23801 40 .10132
60 .1054 .1312 .1583 .1846 70 .0999 .1252 .1523 .1786	85 .22390 30 .07462 80 .21122 20 .04836
90 .0930 .1190 .1460 .1720 90 .0865 .1123 .1386 .1651	75 .19767 10 .02327 70 .18394

Day Making and Day 1026	Viscosity and surface tension
Ernst, Watkins and Ruwe, 1936	C-1, 1979
25°	Schöttner, 1878
100 1.2590 40 1.0971 90 2320 30 .0727	% n % n
80 2054 20 .0454	10°
60 1512 0 0.9971	100 2518000 74.97 66710 94.46 743700 64.05 22210
50 .1239	89.94 355300 49.79 9250 80.31 102100
	102100
Turbaba, 1890	Strong, 1908
mol% a.107 b.10 ⁹	π η(water=1) π η(water=1)
	15°
1,95 545 4900	0 1,0000 60 7.0716
G I	10 1.3137 70 14.2094 20 1.7197 80 48.1632
v _t (0° - 50°) = 1 + at + bt ²	30 2.534 90 81.0256
	40 3.6451 100 777.5382 50 5.4108
Bridgman, 1931	
P kg Dv (cc/g) P kg Dv (cc/g)	
for 1000kg for 1000kg	Schmidt and Jones, 1909
50% 30°	8 n
1.000 0.0291 7.000 0.1279	25 ° 35°
2.000 .0521 8.000 .1385 3.000 .0715 9.000 .1479	0 891 720
4.000 .0886 10,000 .1569 5.000 .1033 11,000 .1651	25 2003 1518
6.000 .1159	50 6145 4272 75 32030 19540
	100 633000 294030
	ری ده این این این این این این این این این این
Danusso, 1954	
mol% v mol% v	Guy and Jones, 1911
30°	γ η τ ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο
0 1512 28,69 1823	25° 35° 45° 25-35° 35-45°
8.31 1632 55.44 1895 14.40 1722 100.00 1911	100 606700 276100 195200 0 1040 0 1040
v = sound velocity (m/sec.)	100 606700 276100 135200 0.1240 0.1010 75 31690 18840 11860 .0681 .0586
	50 6109 4233 3114 .0438 .0358 25 1946 1466 1171 .0327 .0253
	0 891 720 598 .0237 .0204
Busz, 1938	
% sound velocity	
سو قبوليد هند نيم بين بين بين بين من هن هن بين من بين من جن بين هن هن و بين الله هند بين هن هن بين الله هند بين بين بين بين بين بين بين بين بين بين	
14-16° 0 1480	
13.1 1540 26.2 1600	
L	

M	17					
11	uller, 192	4				
•	η	t		1	t	η
18 30 40 5	570800 26 750 0	50 60 70 81	1752 1241 533	100 300	90	32800 17900
== 20 30	72600	50 60	1510 1220	00	80	8610 5080 5010
- 20 30 40	12270 8570 5750	50 60 7 0	323 256	30 9		2040 1690
18 30 40	6889 2845 2113	50 60 70	169 137 115	73		1009 886
18 20 30	2028 1901 1586	40 50 60	119 96 86	9	80	719 639 554
20 30 40	1029 817 672	50 60 70	55 45	55 9		251 317
~ ===						
11	cks, 1929					
 	10	100			30°	
	1.	10				671
10 20 30 40 50 60 70 85 90 92 99.2	2420 3320 4620 7520 12520 22820 59200 174200 726200	1800 2400 3400 5500 8800 16000 40000 116000 202000 424000 680000	1500 2100 2900 4600 7100 12700 30500 84000 144000 289000 425000	1300 1800 2500 3900 5900 10300 24200 64000 100000 195000	1000 1400 1900 2800 4200 7100 15200 35000 54000 99000 150000 571100	840 1100 1500 2100 3000 5000 9300 20000 32000 57000 73000 268100
	50°	60°	70°	80°	90°	100°
0 10 20 30 40 50 60 70 80 85 90 92 95 99.2	551 700 880 1200 1600 2300 3700 6700 20000 34000 43000 43000 175100	461 580 720 950 1200 1800 2800 4800 9700 13000 21000 27000 42300 124100	401 500 610 780 1000 1400 2200 3600 6600 8700 13000 16000 27300 53000	351 430 530 670 860 1200 2900 4200 6400 9200 11000 17300 33100	321 	230
3	30 18 30 40 30 30 40 40 30 40 40 40 40 40 40 40 40 40 40 40 40 40	18	18	18 1393000 50 1752 30 570800 60 1241 40 267500 70 533 81 ,98	18	18

No. No.										
1.255 757000 1.25 142000 1.25 142000 1.26 91320 10 1990 60 9380 20 1540 70 18500 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 3180 90 185600 40 40 40 40 40 40 40	Wolkowa	, 1930					Ernst,	Watkins and	Ruwe, 1936	
1,255 757000	d	η	d	1)		%	η	%	η
Sheely, 1932	1.255 .246 .235	450000		5 14 2 6 91 7 66	320		10 20 30	893 1090 1540 21 40	50 60 70 80	9380 18500 55800
\$\frac{1}{2}\$ \$\frac{1}{2	Sheely,	193 2							1ốŏ 	934000
Section	J			n						
10.58 13.31 - 11.72 - 1040 0	,	20°	22.5°	25°	27.5°	30°	Busz, 1	1938		
	3.85 7.31 17.479 237.558 14.140 19.779 237.558 30.444 336.02 41.60 44.78 48.20 51.33 555.59 57.74 62.50 64.50 64.66 66.19 72.40 77.71 80.83 82.80 77.71 80.83 82.80 87.89 89.89 89.89 92.19 92.19 92.19 95.65 96.08 96.89 98.04	1005 1109 1216 1331 1478 1634 1756 1995 2323 2545 2822 3207 3593 4029 4668 5518 6516 7600 8282 9092 10070 10787 12061 - 14990 15130 17890 23350 28570 70280 481700 70280 85730 103170 131080 140420 172200 231600 337900 375600 481700 565600 671600 724000 783500 985000 7158000		893 981 1073 1172 1295 1530 1731 2007 2191 2420 2741 3054 3407 4611 5409 6266 6804 7447 8756 9731 10473 10473 12050 14210 22030 26810 22030 26810 22030 26810 22030 182100		800 877 956 1040 1147 1259 1351 1520 1751 1907 2364 2625 2919 3347 3909 4552 5679 6187 6770 7222 7986 8548 9750 	0 13.1 26.2 Heimbro N 0.125 .250 .375 .370 .625	14 - 16° dt, 1903 diffusion ratio 20, 0.356 .354 .352 .350 .348	1.0 1.2 1.6 N 0.750 0.875 1.250 1.750	diffusion ratio 0.345 .342 .329 .315 .300
(

Traube,	1885				Mall	er, 1924					
с		σ			t	99%	83%		a ² 39%	20%	0%
	15°							01/0			
5 10 20		72.13 72.12 71.64		ر. هند احت احت احت احت احت احت احت احت احت احت	18 20 30 40 50 60	62.47 62.08 61.53 61.05 60.34	65.26 64.66 63.93 63.05 62.11	67.64 66.68 65.71 64.67 63.59	69.86 68.42 67.18 65.86 64.55	70.92 69.47 68.02 66.79 65.23	71.68 70.25 68.68 67.05 65.50
Skala, J	1912				70 80	59.36 58,72	61.11 60.07	64.67 63.59 62.39 61.21	63.09 61.62	63.72 62.01	63.94 62.16
t	a ²	t	a ²	ر سے خد اس سے اس سے اللہ اللہ لیے کار الے	90	57.85	59.02	59.92	60.13	60.48	60,51
0%		6	0%								
20.2 20%	74.10	19.5 22 30 36	65.88 65.88 65.88 65.88		Ernst	, Watkins	and Ruw	re, 1936			
20 22 24	71.98 71.58		0%		%	σ		%	σ		
24 30	70.90 70.29	19	64.98	ļ			25	0			
37 45	68,99 67,63	24 26	65.08 65.13	ŀ	0 10	72.0 70.5		60 7 0	66.9 66.5		1
40%		30	65.28	;	20 30	69.5 68.5		80 90	65.7 64.5		
18.8	67.58	1	00%		40 50			100	62.5		ļ
18.8 22 26 30	67.58 67.29 67.13	17.8 22	64.13 64.31		:=====			ء سے سے شی سے سے شی واقع صرحت میں عب سے شی			======
42	66.83 66.33	26 30	64.54 64.79								1
		35	65.27			_					
%	τ.105	8	τ.105		Optic	al and el	ectrical	proper	ties		
0	-224	60	0								
20 40	-207 -76	$\begin{smallmatrix}80\\100\end{smallmatrix}$	+45 +19			der Willi	igen, 18				
					spectr lines	a1 		D _u			
						1004		20°		40 4-4	
Drucker	and Moles, 1	910			A	100% 1,45718	80.79 1.4299	98 1.4	3.76% 11341 :	49.69% 1.38805	0% 1.32903
	the mores, I	710				.45810 .45885	.4300 .431	89 .4 68 .4	11436 11510	.38894	.32986 .33048
%	σ	%	ø		aBCDE bFGGH	.459 72 .46196	.4324 .4347	49 .4 71 .4	11589 11803	.38964 .39041 .39242	.33118
		18°		. حي بني علب في بني علد بني الدواجم هي د	E b F	.46485	.4374	97.4	2069 2121	.39242 .39493 .39544	. 33525
0 15	72.8 72.5	50 85	69.5 65.2		G	.46738 .46998 .47204	.4392 .4422 .4441	24 .4	2297 2532 2719	.39710 .39934 .40115	.33714
30	71.4	98	63.5		H	.47289 .47428	.4449	26 ,4	2719 2797 2922	.40190	.34060 .34123 .34227
=========	ر شان الدر میں سے الیاس میں الیاس میں الیاس میں الیاس میں الیاس میں الیاس میں الیاس میں الیاس میں الیاس میں ال - اللہ اللہ اللہ اللہ اللہ اللہ اللہ الل				Ĥ	.47597	.4478	30 .4	3080	.40457	.34227
					=====			======			
					[
					1						
					L						

Lenz,	1880					Strol	mer, 1884				
	n _D	%	n _D	 %	n_	%	n _D	%	n_{D}	76	$^{\mathrm{n}}\mathrm{D}$
	ν 				ⁿ D		میں اللہ اللہ اللہ اللہ اللہ اللہ اللہ الل	17.5°			رپومی میں ہیں میں میں نمی بین اف امیامیاد میں م
100 99 98 97 96 95 93 92 90 88 87 88 87 77 76 77 71 72 71 79	1.4758 .4744 .4729 .4715 .4700 .4686 .4671 .4657 .4628 .4613 .4598 .4584 .4584 .4555 .4540 .4555 .4540 .4540 .4482 .4467 .4453 .4453 .4453 .4467 .4453 .4467 .4453 .4467 .4453 .4467 .4453 .4467 .4453 .4467 .4453 .4467 .4453 .4467 .4467 .4453 .4467 .4467 .4453 .4467 .4468 .4666	665 665 661 665 661 665 665 665 665 665	- 12.8° 1.4249 .4231 .4213 .4195 .4176 .4158 .4140 .4126 .4091 .4079 .4065 .4051 .4036 .4022 .4007 .3993 .3979 .3964 .3955 .3921 .3906 .3875 .38800 .3875 .38800 .3875	321 310 29287 227 2265 221 220 198 17 165 141 110 987 654 321	1.3745 .3732 .3719 .3706 .3692 .3666 .3652 .3649 .3636 .3652 .3557 .3557 .3559 .3557 .3559 .3544 .3447 .3447 .3447 .3417 .3405 .3417 .3415 .3417 .3417 .3417 .3417 .3417 .3417 .3417 .3417 .3418 .3417	100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 Heimbi	1.4727 .4710 .4698 .4681 .4670 .4653 .4653 .4656 .4625 .4608 .4596 .4579 .4563 .4551 .4534 .4523 .4506 .4489	82 81 80 79 78 77 76 75 77 73 73 71 70 69 68 67	13° 1.33	453	1.4206 .4189 .4167 .4150 .4133 .4116 .4099 .4087 .4070 .4059 .4048 .4019 .4008 .3997 .3980 .3969
68 67 :======	.4380 .4366 .4352 .4337 .4321 .4304 .4286 .4267	36 35 34 33	.3813 .3798 .3798 .3772 .3758	2 1	.3380 .3367 .3355 .3342	.500 .750 1.0 1.5 2) -) - -	. 33702 . 33936 . 34174 . 34410 . 34887 . 35365	.33 .34 .34 .34 .35	930 168	.33924 .34162 .34397 .34872 .35346
d		n				%	ⁿ D	8	n _D		,
0.9991; 1.0236; .0433; .0742; .1056; .1240; .1865; .2255;	35397 36829 38600 39633 42891	H ₃ 15° 1.337 346 366 374 393 402 436 456	738 1. 930 . 907 . 135 . 1302 .	H _γ 34084 35265 36370 37783 39713 40633 44044 44907		0 1 2 3 4 5 6 7 8 9 10	17 1,33320 .33438 .33557 .33677 .33918 .34039 .34161 .34283 .34405 .34527	7.5° 11 12 13 14 15 16 17 18 19 20	1.346 .347 .349 .350 .351 .352 .354 .355 .356	74 00 24 50 75 01 27	

,							1022.24				
l	veau, 190						1933-34	 %	n_		
%		n _D	%		n _D	%	D		''D		ⁿ D
0 16.13 53.7 ²	1 3 4	3332	18° 64.6' 100.00	7	1.4193 .4730	0 4.95 6.47 9.87 10.46	1.33303 .33888 .34041 .34459 .34539	20° 54.42 57.80 59.54 64.38 69.31	1.40428 .40981 .41230 .41882 .42702	99.84 98.80 97.38 95.26 92.10	1.473461 .471552 .469325 .466380 .461610
Strong			ر نبي حواجه سر من حد اس ابن جو		ر دن من من من الله الله الله الله الله الله الله الل	14.69 19.73 20.77 25.04 26.86	.35060 .35700 .35832 .36412	69.84 74.41 79.73 85.13 89.76	.42748 .43400 .44217 .45124 .45760	89.97 85.13 79.62 69.31 59.54	.458340 .451245 .442647 .427030 .412297
8	n _D	%	n _D			29.89 34.39	.37045 .37626	92.10 91.98	.46161 .46579	49.75 25.04	.39 7 411 .364134
0 10 20 30 40 50	1.3277 .3390 .3538 .3650 .3787 .3891	5° 60 70 80 90 100	1.4020 .4129 .4386 .4529 .4650			39.60 44.40 49.75 49.91	.38360 .38981 .39741 .39796	91,98 95,26 97,38 98,80 99,84	.46638 .46932 .47159 .47367	(second	series)
:=======						Ernst	, Watkins	and Ruwe,	1936		į
						8	n _D	%		n _D	
Stedman	n, 19 2 4 a			و النافر النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام				2 5°			
78	\mathbf{n}_{D}	%	n _D	%	^{n}D	0 10	1.3332 .3451	60 70	1.	4145 4281	
100.000 99.748 97.856 95.960	47313	25° 68.708 66.718 64.724 62.718 60.702 58.678	1.42522 .42222 .41924 .41626	32.210 30.166 28.122 26.080	1,37302 .37028 .36757 .36487	20 30 40 50	.3582 .3708 .3838 .3992	60 70 80 90 100		1435 1472 1729	
94.054 92.140 90.216 88.288 86.352 84.406 82.456	.45824 .45525 .45225 .44925 .44624	56.654 54.630 52.602 50.572	.39857	24.038 21.996 19.954 17.916 15.880 13.850 11.824	.36220 .35856 .35695 .35436 .35180 .34927 .34677	Thwing		 %	د المداعد العداعية على علي علي علي ال		
80.502 78.546	.44324	48.540 46.504 44.466	.39278 .38990	9.814 7.814	.34431 .34187	%	E			: 	
76.586 74.624 72.660 70.690	.44022 .43722 .43422 .43122 .42822	42.426 40.384 38.342 36.300 34.254	.38704 .38420 .38138 .37857 .37579	5.832 3.866 1.912 0.000	.33948 .33712 .33378 .33251	0 10 20 30 40 48.5 56	71.3 71.3	0 58 4 65 0 73 6 80 6 89	69 64 61 59 57 56	.40 .80	
Iyer and	Usher,	1925				========					
%	n _D	%	n _D	Æ	n _D						İ
0 5 10 15 20 25 30	1.3333 .3394 .3455 .3516 .3577 .3641 .3709	25 35 40 45 50 55 60 65	1.3777 .3846 .3917 .3985 .4058 .4131 .4204	70 75 80 85 90 95 100	1.4281 .4357 .4435 .4506 .4576 .4641 .4730						

WATER + GLYCEROL

	Heat constants
Åkerlöf, 1932	
ε 20° 40° 60° 80° 100°	Emo, 1881
0 80.37 73.12 66.62 60.58 55.10 10 77.55 70.41 63.98 58.31 - 20 74.72 67.70 61.56 56.01 - 30 71.77 64.87 58.97 53.65 - 40 68.76 62.03 56.24 51.17 - 50 65.63 59.55 53.36 48.52 - 60 62.03 55.48 50.17 45.39 41.08 70 57.06 51.41 46.33 41.90 38.07 80 52.27 46.92 43.32 38.30 34.70 90 46.98 42.26 38.19 34.37 31.34 100 41.14 37.30 33.82 40.63 27.88	\$\begin{array}{c ccccccccccccccccccccccccccccccccccc
	15 .954 80 .678 20 .935 85 .656 25 .917 90 .634 30 .894 95 .611 35 .876 98 .594 40 .852 100 .576 45 .830
Albright, 1937 g ε g ε	
25° 0.00 78.48 60.15 62.38 9.88 75.98 70.00 58.52 20.33 73.86 79.86 54.08 30.19 71.44 90.42 48.66 39.67 68.93 100.00 42.48 50.23 65.72	Magie, 1901 mo1% U mo1% U at room temperature 0.20 0.9954 0.99 0.9803 .25 .9948 1.13 .9771 .40 .9917 1.99 .9621 .67 .9867 2.48 .9556 .75 .9841
Henkel, 1905	
% х 18°	Ernst, Watkins and Ruwe, 1936
0 0.0136 4.56 .0327	% U % U
22.23 .0674	25° 0 1.000 60 0.715 10 0.967 70 .665 20 .930 80 .610 30 .870 90 .579 40 .810 100 .555 50 .770

										
Guc	ker an	nd Marsh,	1948		الله الله الله الله من منع منع المع المع بين هي هي هي من منيسي	_,	tz, 187			
t			U			d ²⁰		heat condu 8° - 14°	ctivity 28° -	(relative) 36°
	25%									نه هن چي چيدها هند خي هن ميدان هند في چي چي چي چي د مي درويدي
$\begin{bmatrix} -1.1 \\ -3.9 \\ -6.7 \end{bmatrix}$	0.88 .88 .87 .86	0.87 .86 .86 .85	0.86 .85 .84 .83	.83 .82 .82	0.82 .81 .80 .79	0%	.25	363 413 ========	66	
-12.0	6.8 4 <u>.</u> 1	4.8	0.82 3.7	0.80	0.78 crist.					
-12.2 -15.0 -15.2	2.7	3.2 2.4	3.6 2.7	0.80 0.79 2.9	0.77	Bat	es, 193	36		
-17.8 -18.8	_	1.9	2.1	2.4	0.76 2.4	R		heat c		ty . 10 ⁵
-20.6 -23.1	-	-	1.8	2.0	2.2		10°		30°	40°
-23.3 -26.1		1.4 1.2	1.6 1.3	1.7 1.5	1.9 1.6	0 5	138 133	141 137 133	145 140	149 144
-28.3 -28.9 -31.7	1.0 0.9	1.1 1.0	1.2	1.3 1.2	1.4 1.25	10 15 20	130 125 121	133 128 124	137 131 127	140 134 129
	50%	55%	60%	65%		25 30	117 112	110 115	122 117	125 120
	0.80 .79	0.77 -76		0.71 .70		35 40	109 105	111 107	114 108	116 110
$-3.9 \\ -6.7$.79 .78 .77 .76 .75 .74 .73 .72 2.0	0.77 .76 .75 .74 .73 .72 .71	.73 .72 .71 .70 .69 .67 .66	.69		45 50	102 97 94	103 99 95	105 100 96	106 101 98
-9.4 -12.2	.76 .75	.73 .72	.70 .69	.67 .66		55 60 65	94 90 86	91 87	91 88	92 89
-15.0 -17.8	.74 .73	.71 .70	.67 .66	.65		70 75	83 80	84 81	85 81	85 81
-20.6 -23.1 -23.3	2.0 2.0	0.68	0.64	.62 0,61	crist,	80 85	77 74	78 74	78 74	78 74
-26.1 -28.3		0.67	0.63	0.60		90 95	72 70 68	72 70	72 70	72 70
-28.9 -31.7	$\frac{1.5}{1.3}$	1.6 1.4	0.62 0.61	$\substack{0.59 \\ 0.58}$		100	68 50°		68 70°	68 80°
						- <u>o</u>	152	156	160	163
%		t	U			- 10 - 10	147 143	151 146	154 149	158 152
22.7 22.7		-6.6 -6.7	$\frac{9.1}{6.9}$			15 20	137 132	140 135	143 138	146 141
22.7 36.5		-7.5 -13.3	$\frac{5.8}{3.5}$		crist.	25 30 35	127 122 118	130 124 120	132 126 122	135 1 2 9
36.5 36.5 47.1		-14.3	3.1			40 45	112 108	114 110	116 111	1 24 118 113
47.1 47.1		-22.8 -25.9	2.4 2.4 1.54			50 55	103	103 100	105 101	107 102
	=====	========			ن من نباید خبر من عن عبر شدر خدر مند سر حد من الله شد خد خد خدر در الله بدر من خدر خبر من خبر خبر خدر حد خرا من من خبر خبر الله خار خدا الله خبر ا	60 - 65	99 93 89	94 90	95 91	96
						70 75	86 92 79	86 82 79	87 82	91 87 82
						80 85	74	74	79	7 9
						90 95 100	72 70	72 70	75 72 70	75 73 70
						100	68	68	68	68
						======				نہ ہے جات اس ختم نور کے خدر سے جات کرے شہر ہے کا جات کے اس کے اس کے اس کے اس کے اس کا دار ہے۔ اس کا دار ہے اس اپنے اس کا اس ختم نیے اس کا اس کا اس کی اس کی سے سے اس کی اس کی اس کا اس کی اس کا اس کا دار ہے اس کا دار
						<u> </u>				

Erk and Keller, 1936	
هند خديد الكو الهند الكو حديد خديد من حديد الكو شديد خديد الكو حديد الكو الكو الكو الكو الكو الكو الكو الكو	Pushin and Glagoleva, 1922
% heat conductivity (kilocalories/meter/hour/degree)	mol% f.t. E min.
10° 20° 30° 50° 70° 0 0.501 0.514 0.526 0.551 0.576 10 .466 .480 .493 .519 .546 20 .435 .448 .461 .487 .513 30 .406 .418 .430 .455 40 .378 .389 .400 .423 .445 50 .352 .362 .371 .391 .410 60 .328 .335 .343 .358 .374 70 .304 .309 .315 .326 .338 80 .280 .283 .287 .294 .301 90 .235 .257 .259 .262 .265	100 116.6
Gerlach, 1884	13,4 36,5 -4,4 - 11,1 27,4 -4,4 - 9,0 22,8 -4,6 - 7,0 14,0 -4,4 - 4,8 -1,0 -4,4 - 3,04,1 8,0
% Dt % Dt	2.5 -3.1 -4.5 -
10 +1.1 50 +4.7 20 2.0 60 4.9 30 3.3 70 4.4 40 +4.1 80 3.6	2.0 -2.4 -4.5 - 0.9 -1.1 -4.5 - 0 0 -4.5 -
90 +2.4	
Katz, 1911 % Q mix % Q mix	Water + i-Erythritol (C ₄ H ₁₀ O ₄)
cal/g cal/g	Parks and Manchester, 1952
3.79 0.62 44.76 4.4 7.58 1.16 62.15 4.3 9.75 1.45 74.02 3.8 13.95 2.0 84.74 2.8 24.62 3.2 100.00 0.0 35.87 4.0	Q mix does not vary with concentration.
Water + 1,2,6-Hexanetriol ($C_6H_{14}O_3$) Ross, 1854	
رها چونون من حر جر جر جر جر جر جر بن جر بن جر من من من من النواق الديد	
% f.t. % f.t. 10 -1.6 40 -9.7 20 -3.5 50 -14.5 30 -6.1 60 -21.9	•

Water + Diglycerol (C ₆ H ₁₊ O ₅)	t P 95.251% 98.014% 99.012%
Lewis, 1922 *** *** ** ** ** ** ** ** *	100 0.777 0.780 0.755 110 0.979 0.991 0.972 120 1.209 1.224 1.209 130 1.405 1.427 1.425 135 - 1.487 - 140 1.502 1.504 1.499 150 1.457 1.439 1.434 155 - 1.268 - 160 1.347 sic 0.976 sic 0.981 sic 0.981 165 - 0.739 0.402 170 1.692 0.836 0.437 175 - 0.888 - 180 2.011 0.997 0.509 190 2.420 1.217 0.610 200 2.827 1.447 0.721 210 - 1.725 0.852 220 - 2.022 1.027 230 - 2.310 1.197 240 - 2.652 1.399 250 - 2.922 1.587
Water + Mannitol ($C_6H_{14}O_6$)	=======================================
Frazer, Lovelace and Rogers, 1920	Pearce and Snow, 1927
% Dp % Dp	m p
0° 1.76 0.0307 9.77 0.1863 3.47 .0614 11.19 .2162 5.12 .0922 12.61 .2478 6.71 .1227 13.97 .2791 8.26 .1536 13.97 .2792 9.76 .1860 15.28 .3096	0.0 23.752 0.4 23.586 0.6 23.499 0.8 23.415 1.0 23.328
	Beckmann, 1890
Yokoda, 1926	
t P. 60.047% 90.107% 91.846%	0 100,000 8,91 100,265 2.32 100,065 12.73 100,405 4.65 100,125 16.15 100,535
100 0.819 0.766 0.773 110 1.075 0.986 0.981 120 1.469 1.220 1.251 130 2.026 1.425 1.432 140 2.653 1.577 1.509 150 3.543 1.933 1.800 160 4.524 2.428 2.248 170 5.741 3.050 2.783 180 7.163 3.626 3.358 190 8.506 4.301 3.925 200 10.498 5.022 4.610 210 - 5.928 - 220 - 6.745 - 220 - 6.745 - 220 - 240 - 9.016 - 250 - 10.351 -	Baroni, 1893 * b.t. * b.t. 3.10 100.097 16.22 100.548 6.11 100.195 21.58 100.725 9.16 100.292 26.83 100.995 12.41 100.407

Johnston, 1906	Cohen, Inoue and Euwen, 1910
% b.t. % b.t.	P %
0.95 100.143 7.16 100.344 1.87 100.171 7.89 100.367 2.78 100.191 8.66 100.396 3.65 100.226 9.75 100.429 4.50 100.254 10.48 100.459 5.21 100.278 11.26 100.490 6.01 100.305 12.07 100.520	24.05° 1 17.122 250 17.301 500 17.451 1000 17.628 1500 17.790
Findlay, 1902	Berkeley and Hartley, 1890
\$ f.t. % f.t.	00
7.06 0 26.15 40 8.60 5 31.97 50 10.41 10 31.83 50.8 12.57 15 37.50 60 15.04 20 42.69 70 17.32 24.5 47.78 80	10 13.1 11 14.6 12.5 16.7
17.62 25 52.56 90 26.25 30 57.08 100 23.04 35.8	Campetti, 1901
Jones, 1904; Jones and Getman, 1904 m f.t. m f.t.	t % d sat.sol. 10.00 12.23 1.044 15.01 13.92 1.050 20.02 15.96 1.057
0.2 -0.400 0.6 -1.234 .3 -0.600 .7 -1.440 .4 -0.800 .8 -1.700 .5 -1.033	Speyers, 1902
	t d
Braham, 1915 1919 m f.t.	sat. sol. 0.0 1.044 15.2 .049 31.1 .069 47.7 .087
0.2709 -0.505 0.5460 -1.019	47.7 .087 68.0 .124 85.9 .169
% f.t. % f.t.	
9.05 -1.019 59.26 88.1 17.78 +25.00 60.10 90.1 32.89 50.70 65.40 98.0 33.29 51.50 66.10 99.3 44.01 67.40 66.67 100.8 45.62 70.50 67.32 101.8 54.93 82.90 68.35 103.6	Jones, 1904; Jones and Getman, 1904 m d m d 0° 0.2 1.010512 0.6 1.036940 3 .017280 .7 .041980 4 .022988 .8 .045912
	.5 .029724

Åkerlöf, 1932	Water + Methyl lactate (${\sf C_4H_80_3}$)
t ε 0% 5% 10% 15% 20%	Clough, 1918
20 80.37 79.66 78.84 78.07 -	% d D 5461 Å 4078 Å
25 78.54 77.83 77.12 76.30 75.47 30 76.73 76.06 75.18 74.47 73.64	20°
40 73,12 72,40 71,57 70,87 70,10 50 69,85 69,16 68,33 67,57 66,74 60 66,62 65,85 65,08 64,38 63,61	$ \begin{bmatrix} 5,36 & 1,005 & 1,3 & 1,4 & -0.9 \\ 10.0 & .012 & 1,3 & 1,4 & -0.5 \\ 20.0 & .026 & 1,8 & 1,8 & -0.2 \\ 50.9 & .063 & 2,1 & 2.5 & +1.0 \\ 80.0 & .086 & 4,1 & 4,4 & +4,5 \\ 100.0 & .093 & 7,46 & 8,39 & +11,21 \end{bmatrix} $
White, 1936	
m U m U	Water + Methyl malate ($C_6H_{10}O_5$)
25°	water - Methy's market (egas 1005)
0.0100 0.99699 0.1500 0.98684	Grossmann and Landau, 1910
.0200 .99627 .1998 .98352 .0300 .99555 .2997 .97661 .0500 .99415 .5002 .96359 .0699 .99277 .6997 .95218 .1000 .99050 .9995 .93585	c (α) 20 red yellow green pale dark viol, blue blue
Parks and Manchester, 1952	2.5025 -6.78 -7.42 -9.97 -10.67 -11.36 -12.62 4.8800 -7.26 -9.09 -10.45 -12.68 -14.07 - 12.5405 -7.89 -9.89 -11.88 -13.24 -13.95 - 25.0810 -7.79 -9.43 -11.04 -12.70 -13.52 -14.14 50.1620 -7.59 -8.79 -9.19 -10.39 -11.99 -
m Q diss. m Q diss. cal/gr. cal/gr.	
cal/gr. cal/gr.	Water + Methyl tartrate ($C_6H_{10}O_6$)
0.3634 29.59 0.2531 29.53 .2960 29.57 .1313 29.65 .2817 29.56 .1212 29.62	Patterson, 1904
.2726 29.53 .1140 29.70	t d t d t d
	5.16915% 10.2298% 24.8854%
Water + Dulcitol (C ₆ H _{1k} O ₆) Parks and Manchester, 1952	19.55 1.01386 17.86 1.03003 17.65 1.0778 26.37 .01198 26.73 .02719 31.77 .0709 31.83 .01016 33.13 .02471 51.60 .0593 48.00 .00350 47.70 .01810 73.00 .0450 78.90 0.98630 77.50 .00070
Q diss. does not vary with concentration	49.7715% 74.8685% 100%
	18.50 1.1633 16.9 1.2543 18.25 1.3370 32 .1536 39.8 .2333 42.40 .3122 55.5 .1349 58 .2156 60.35 .2925 77.7 .1161 77 .1967 77.30 .2745
Water + Isodulcitol ($C_6H_{14}O_6$)	% d % d
Berkeley and Hartley, 1915	20°
≸ P d	0 0,99825 49,7715 1.1623 5.16915 1.01374 74,8685 .2515 10,22980 ,02943 100,0000 .3352 24,88540 .07660
23.73 46.53 1.08706 26.29 53.62 1.09744	21.00040 .07000

	Meng, 1936				Patt	erson,1904	یہ میں میں میں میں میں ہے۔			
t	d		_d		t	(α) _D	t	(α) _D	t	(a) D
	c= 3,9	69			5	.16915%				.8854%
14 24 34 48	1.0091 .0061 .0031 0.9989	58 0. 68 75 .	9959 9929 9988	ر من الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران وي الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران الوران ال	17.2 17.4 30.7 49.9 64.2 99.0	21.10 20.97 20.81 20.28 19.71 17.88	17.2 17.5 30.3 47.5 66.4 99.0	20.47 20.43 20.34 19.87 19.03 17.14	17.2 17.4 18.0 35.7 54.5 99.0	18.73 18.67 18.74 18.46 17.81 15.95
Patters	on, 1903				16.7 17.1		17.4 28.3	9.42 9.74		
t	(α) _D	1	l	(α) _D	17.1 17.4 27.8 38.3 62.7 99.5	14.71 14.61 14.70 14.61 14.59 14.13 13.33	28.3 44.8 65.4 98.5	10.06 10.31 10.50		
16.8 20	1.83 2.07	100% 5] 7]	. 6	4.72	62.7 99.5	14.13 13.33	وجد حدومه معالي بيد ميد		ن نرند خون وين سيد خاند خون است الحان ا	ر شدر دسال مدین الله الله الله الله
27.8 40.8 52.3	1.83 2.07 2.64 3.60 4.40	6] 7] 99 100)	5.15 6.18		هر جيد اشيو کيو نمي اندر اندي اندي اندو اندو				-
t	18.25		60.35	77 3	Lowry	and Abra	n, 1915			
đ		1.3122			W. I.	c=25	100%	w.l.	c=25	100%
					6438 5780 5461 5086	+16.0- 19.20 21.10	20-	4800 4678 4358	25.23	-2.47
Patters	ion, 1903-19	04			3080	20,44	1 -0,09			
t	^(α) D	t	(α) D		======		ہے۔ جس میں میں جب کی این اس امار اس			
		100%		و عبر مي دن عب بيد ش دير مي عبر عبر جد						
16.8 20.0 27.8	1.83 2.07 2.64 3.60 4.40	61.6 71.6 99.0	4.72 5.23 6.15		Yen	ki Meng, l		نتيم نتيب شين النان داند الله الد		
27.8 40.8 52.3	3.60 4.40	100.0	6,18		c	vellow	(α)			
	د مي ميد من من من من الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين وفي عليه من الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين الدولتين	عد در در در در در در در در در در در در در		و میں اس میں میں جی جی میں میں اس اور اور اس است		yellow	20		indigo	
Patter	son, 1904				2.5 5.0 10.0	10.60 10.55	11 /	,	16.0 15.6 15.35	
	(α) <mark>m</mark> ol	%	ر _{د ک} ا	nol	15.0 20.0	10.30	11.3	35 85	15.0 24.3	
		20°	<u></u>)	30.0 40.0	10.55 10.37 10.30 9.85 9.30 8.75	10.1	1 7 5 545	13.115 11.82	
5.169	15 37.4		5 26.1	5						
10.229 24.885	80 36.4 40 33.3	49.7713 74.8683 100	16.9 3.6	2	t	(a) green	t	(α) graen	
ے میں میں میں صدر صدر صدر اس	ے جہ دن پر جی جہ ضم ضور نیم افضا افتار خدم جو میں میں میں افتار خدم ضور افتار افتار افتار جمع ضور	·					3,969			
					14 24 34 48	11.80 11.95 11.75 11.55	58 68 75	1	1.30 0.90 0.65	
									س بيد سر سيد سيد هد هد سر سر سر سر در بيد در در سيد سيد سال سر سر س	

Water + Et	hyl tartrate (C ₈ H ₁₄ O ₆)		Patterson,	1904		
				%	đ 9	e d	
Landolt, 18	77		ر هند سند مند وي مند شد من جي جي جي حد سن		20°		
×	d			0 01505	0.998252 10	2307 1.0220	9
	20°			2.02798	.002820 50	0338 .0574 2250 .1152	6
0 13.8864	0.998			4.99894 4.99917	.009700 100	.05 .1670 .00 .2053	0
39.8205	.088	41		10.07560	.021650		
69.6867 100	.150 .198	79 90		t	đ	t	<u> </u>
				1	4.9	989 %	
			ي أحد ١٠٠٠ الروايين علي العراجي أحد عن فعر بين الدو الدو الدو الدو	18.60			0.99970
				18.60 21.65 30.20	1.00920	47.20 64.40 83.60	0.99090 0.97930
Patterson,	1901					917 %	
t	đ	t	đ	19.4		21.6 756 %	1.00926
	1	<u> </u>		19			1.00290
15.8			0.9993	21.4 33.8	1.02122 1.01663	61.4 80.7	0.99080
14.6	2.5		0.0071	1	25.0	338 %	
26.8	1.0053 1.0024	$\begin{array}{c} 41.6 \\ 55.0 \end{array}$	0.99 71 0.9912	18.8 23.0	1.0580	49.9 81.6	1.0407 1.0185
	4.99			20.0	50.2	25 %)
14.4 17.6	1.0113 1.0106	36.1	1.0066	13.5 27.2	1.1200	49.8 99.4	1.0918
	9.99	4 %		27.2	75.0		1.0479
13 14.1	1.0237 1.0235 1.0220	19.2 27.5	1.0220 1.0192 1.0164	14.8 40	1.1718	62.2 99.4	1.1275
18.5			1.0164	40	1.1467	yy .4	1.0903
15.2	24.95 1.0598	•	1.0562				
15.8 16.0	1.0598 1.0595 1.0594	33.3	1.0562 1.0509]			,
10.0	49.99	3 %		Holmes, 19	13		
15.7	1.1186 1.1180 1.1137	35.3	1.1046 1.0807	%	d %	đ	
16.8 22.3	1.1137	63.8 70.3	1.0807		15°		
	74.9	•	_	0	0.99913 65.147	1.15151	
18.2 18.3 29.7	1.1691 1.1690	$\begin{array}{c} 41.2 \\ 58.0 \end{array}$	1.1482 1.1323	13.853	1.02615 69.700 .03239 73.811	.16086 .16910	
29.7	1.1588	4		1 24.024	.04855 74.803 .05736 80.610	.18183	
16.8	1.2087	₹ 68.1	1.1566	30.174 30.781	.07240 85.063 .07384 88.392	. 19535	
37.2 46.8	1.1878 1.1783	76.2 99.4	1.1566 1.1484 1.1248	40.683 49.019	.09730 95.748 .11664 100.000	70568	
58.3	1.1783 1.1665		-7-2-15	49.019 57.552	.13526		
i				Po ***	and Manager	1000	İ
					and Montgomeric		
				·	Dt	Dv	
				50.225	+0.5	-2.03	
				<u> </u>			

WATER + ETHYL TARTRATE

Patierso	on, 1 901				
K	(α) _D	K.	(α) _D	K	(α) _D
1%		2.5	%	4.9	999%
22.3 2 27.2 2	26.06 26.30 25.67 25.01	14.6 14.7 27.3 50.3	25.80 25.98 25.66 24.65	15.3 16.6 30.8	26.23 26.16 25.80
9.994	1%	24.95	4%	49.	993%
18.6 2 20.7 2 21.3 2	26.17 26.05 25.69 25.95 25.57	15 20.6 26 32.5 44.9	23.83 23.55 23.31 22.71 21.88	14.7 15.0 15.1 19.9 26.8 34.2	17.44 17.39 17.41 17.34 17.17 16.97
49.993	% later	74.99	%	1009	
15.3 1 15.9 1 17.0 1 52.6 1 56.1 1	17.42 7.41 17.35 17.34 16.68 16.63 16.42	16 16.2 18 19.5 30.6 45.0 49.1 53.4 67.2	11.44 11.47 11.57 11.66 12.19 12.82 12.97 13.13 13.63	10.8 11.3 16.0 20.1 25.1 29.9 33.7 37.6 46.1 67.2 84.4 89.4	6.63 6.66 7.21 7.67 8.25 8.70 9.10 9.56 10.24 11.75 12.30 12.30 12.97

%	$^{\alpha}D$	%	$\alpha_{\mathbf{D}}$	
	2	0°		
4.99 10.0756 25.0338	1.324 2.610 5.919	50.225 75.05 100.00	8.795 8.886 7.666	
Landolt,	, 1876 - 1	877		
%		(α) D		
	20°			
13.886 39.820 69.686 100.000)5 7	25,200 20,220 14,001 8,309-8.	306	
		مدة الحدد ا	بده احد جنی طبق احد کنم کنن دید. حجد کنن کنن بدر آدید حجد جنی کنن کنن کنن کنن کنن کنن کنن کنن بدر آدید حجد کنن کنن کنن کنن کنن کنن کنن کنن کنن کن	د نفرد امن حید التو التو الدو الدو امن امن میں ا د من مید الدو الله الدولان الدو الدو الدو الدو الدو الدو د الله الدولان الذي الدولان الدولان الدولان الدولان

t	(α) _D	t	(α) _D	t	(α) _D
4.99	894%	4.99	4.99917%		56%
10.7 11.1 28.7 43.6 65.0 98.3	26.57 26.58 26.35 25.56 24.15 22.09	12.6 18.3	26.70 26.65	10.3 25.8 41.4 68.9 98.0	26.28 25.74 24.94 23.11 21.34
25.03	38%	50.22	25%	75.05	%
12.0 23.3 54.1 98.0	24.03 23.49 21.73 19.15	16.4 31.2 50.1 98.0	17.60 17.32 17.03 16,44	17.1 29.5 50.2 68.4 98.0	11.69 12.33 13.39 13.84 14.61
t	(α) _D	t	(α) _D	t	(α) _D
		100)%		
10.8 11.3 16.0 20.1 25.1	6.628 6.657 7.181 7.666 8.240	29.9 33.79 37.6 46.1 55.1	8.691 9.089 9.550 10.230 10.936	67.2 77.1 84.4 89.4 100.0	11.759 12.29 12.72 12.47 12.97

Patterson, 1904

Water + I	Ethylene c	hlorhydr	ine (C ₂ H,	(OCI)	Leca	it, 1949			
		1010	•		8		b. t		
	and Riva				42	.5	25.	8 Az	
# [%]	b.t.		D. T.		100		128.	8	
0 10	100 99.0	60 7 0	98. 98.	3 9	======		ر مدائد حک میکند کرد. ر می ساز اندر می ساز اند سی اندر که است اس		
20 30	$\begin{array}{c} 98.4 \\ 98.0 \end{array}$	80 90	101	-	Boz		llarati, 19		
40 50	100 99.0 98.4 98.0 97.9 98.0	100	130.	5	*	n_	% 	ⁿ D	
AZ - 97.	02 9110 41	10					20°		
	f.t.	-	f.t	•	12.0	1.3330 3464		1,4039 .4185	
10 20	-2.9 -5.3 -9.7 -11.3 -12.7	60 7 0	- 14 - 15	.0	15.0 24.4	14 .3493 17 .3596	78,53 86,31 87,44 98,87 99,53 100,00	.4271 .4287 .4413 .4416	•
30 40	-9.7 -11.3	80 90	-20 -38	.2	24.6 30.4	55 .3604 18 .3660	98.87 99.53	.4413 .4416 .4421	•
50	-12.7				39.5 49.5	36 .3860	100,00	4421, 	
=======================================					Mate	ika and Je	linek, 1937		
Bozzath a	and Gallar	ati, 193	l.		78	d		d	
b.t.	mo1%			mo1%	0.0	0.9982	3 20° 57.26	1,11985	
	L	ν		L V	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	54 1.0039	6 70.41 8 75.48	.14503	
		400 mm			8.3	38 .0161 16 .0256	6 81.93 1 88.28	. 16677 . 17819	• •
82.9 82.1	0 6	5.1	80.8	20 13.9 25 14.6	14.	00 .0311	7 90.60 4 92.11	.18281 .18556	l S
82.9 82.1 81.6 81.1 80.9 80.8 80.6	2 9 4 10	.9	81.0 81.3	30 15.2 35 16.2 40 17.4	25. 30.	0547 0665 0665	3 93.61 7 95.00	.18801 .19083	3
80.9 80.8	5 11	1.5 2.4 3.2	81.8 82.5	45 18.8	34.	12 .0736 28 .0845	3 96.71 7 98.37	.19400)
80.6 80.55	9 13 13.2	3.2	82.5 83.4 84.4	50 20.4 55 22.4	45. 51.	48 0969 06 10 7 9	3 20° 57.26 64.19 6 70.41 8 75.48 6 81.93 1 88.28 7 90.60 4 92.11 3 93.61 7 95.00 3 96.71 7 99.12 100.00	2002	l l
					×		n		
% 40		b.t. 504 mm	760 mm			C	D 	F	<u>G</u>
0 8	32.9	89.0	100		0.0	1.33110	1.33294 .33330 .33521	1.33711	1.34045 .34083
3.71 8 13.90 8	32.9 32.2 31.0	88.0 87.5	98.4		2.6	33321 333567	.33521 .33752	- 04 (80)	.34287 .34530
28.31 8	80.6 80.5 80.8	89.0 88.0 87.5 86.6 85.6	97.9 97.8		11 8.3	3 . 33925	. 34138	.34352 .34558 .35278	.34965 .35350
50.00 8	80.8 80.8	86.4	97.6 9 7. 8		12.4 14.9 19.4	34639 35143	.34828 35351	.33/83	.35655 .36140
75.40 8 83.50 8	11.9 14.0 17.3	86.4 87.8 89.9 93.6 105.6	99.0 100.9		25.6 30.6 39.2	4 .35832	36023 36586 37532 38182	36405	.36855 .37414
97.30 9	87.3 8.8	105.6	105.4 118.7		(45.4)	3 .3 73 13 3 .379 77	.37532 .38182	.37038 .38007 .38670	.38379 .39065
	0.7 0.6	114.0 117.0	126.9 128.6		51.0 57.2	38572 39 2 46	.38785	.39275	.39678 .40369
h +	mo.1#	· · · · · · · · · · · · · · · · · · ·			64.19 70.4	.40650	.40864	.40710 .41398 .41961	.41128 .41828
b.t.	mo1% L V		t.	mol% L V	75.48 81.93 88.23	3 41925	.41426 .42155 .42846	.42686 .43398	.42399 .43138 .43855
85.5	60 24	.5 93	3.3 8	30 41.8	90.6	.42868 .43028	.43100 .43278	.43650 .43826	.44104 .44273
86.9 88.7	65 27 70 30	$\begin{array}{ccc} 1 & 96 \\ .6 & 99 \end{array}$	5.2 8 9.8 9	35 50.8 90 63.7	93.6 95.0	.43204 .4336 2	.43429 .43595	.43993 .44155	.44450 .44604
90.9	75 35	.2 104	1.4	79.6	96.7 98.3	.43543	.43769	.44334 .44513	.44822 .44976
					100.00	.43832	.44065 .44197	.44628 .44744	.45098 .45210
								ر الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور و الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور	. خورجي جن حال هي اين هو اين حال يو اين ما و اين احد اين ا . باين جن خورها ي خورجي خورجي - بين هم يوه اين احداد د . وهم جن حال خورجي خورجي خورجي حداد د

Water + Ethyl	lene iodhydrine (C H.OT)							
Hater + Ethy	rene rodnydrine (C2H5OI)	∦ .						
Lecat, 1949			1	water	+ Dieth	anolamin	e (C ₄ H ₁	102N)	
R	b. t.	ير اين شد در معرامي مين سي جي جود آهن هي 100 اين اين اين اين		l.e i hu	sh and S	horina,	1947		
77	98 7 42	ر جي جي اين اين سيد سيد سيد شيد شيد خيد خيد جي التي اين اين اين اين		t		p			الدر على الدور ديد ليد الدو الدو الدو الدو الدور
77 100	98.7 Az 85 (25	mm)		•	2 5%			100%	
ی داده افزو نین شدن دین چین فور دین است کنی همید شدند. به نمو افزو نمی دی امن هید افزو چین داده است امنی دادم افزو . به نمو افزو نمی دادم امنی دین و نمو چین نامه شدن سود اما دادم .	النبي ميدة مثين عليه بندم منين بنين لين باليد بالدو الدود الدود الدود الدود الدود الدود الدود الدود الدود الد الدود بنيوة كلود الدود بنيان منين الدود الدود الدود الدود الدود الدود الدود الدود الدود الدود الدود الدود الدو الدود الدود الدود الدود الدود الدود الدود الدود الدود الذود الدود الدود الدود الدود الدود الدود الدود الدود ا	ين اليون اللهاء اللهاء اليون اليون وهل مثل مثل اللها أن المثل اللها اللها اللها اللها اللها اللها اللها اللها في اليون اللها اللهاء اليون اللها اللها على هذه اللها اللها اللها اللها اللها اللها اللها اللها اللها اللها ا في اللها اللها اللها اللها اليون اليون اللها اللها اللها اللها اللها اللها اللها اللها اللها اللها اللها الله		30	0.003	0.010	0.025	0.08	
Water + Chlor	ral alcoholate (C ₃ H ₇ O ₂ Cl ₃)),	50 7 5	.010 $.043$.037	.100 .480 1.820	0.36 1.66 6.31	0
				00	. 150	.550	1.820	6,31	0
Beckmann, 188	والله اللها هنو فين منذ هيونين جي لين الهواهية فالرابية ولاء حدد فين مني .	ده الله الله الله الهوائم عن من من الله الله الله الله الله الله الله الل		t	2" - 1	P ₁			
	b.t.	ي الله الله الله الله الله الله عليه الله الله الله الله الله الله الله ا				50 mol	75 mo	1%	سے میں سدر میں میں شو امیا میں مو امیا بنو امیا
1.824 5.605	100.350 101.070 102.225		11 .	30 50	18.2 53.8 191.0	$11.5 \\ 39.0 \\ 145.0$	4.3 19.1		
5.605 11.740 17.830	102,225 103,355			7 5 00	191.0 646.0	$\substack{145.0\\458.0}$	63.1 214.0		
ن سود حام نوی نوید کوی دی دور کوی اگم است اموا کی دی بر خود حام این او برد اموانی کای این اما این اما این اما می می است این در در خود این این این اما این اما این اما این اما اما می ماه این در	سور الهو مولم حمد الهود بها الهود الهود الكال الأول الله اللهوا الله الله الله الله الله	ه شدر مید اندر حیر عمل حی شیر خود اندر آندر اندر اندر اندر اندر اندر اندر اندر ا	======						
Water + Monoe	ethanolamine (C ₂	H ₂ ON)		t	20%	40%	d 60%	80%	100%
		•		 10	1.019	1,054	1.080	1.097	1,106
Leibush and S	horina, 1947	نتيد شنية البيد التيد شهد شهد سيد شهد شند شاد الله النبو التيد سال ال		2 0 30	.016	.047 .042 .036	.072 .067	.089 .082	.099 .092
t 25%	P ₂ 50% 75%	100%	₩ ;	40 50	.009	.036 .029 .025	.060 .053	.075 .069	.084 .077
30 0.03				60 7 0	0.000	.019	.047	.064 .057	.069 .062
50 0.10	0.07 0.23 0.23 0.80	0.83 3.31		80 	0.988	.013	.034	.050	.055
75 0.40 100 1.26	0.91 2.88 3.02 9.55	13.80 50.10	}	t	204	η	4	1004	
t	P1	ر الله في فيد شو من شو شو سرد شو الله الله الله الله الله الله			20%	50%	75% 	100%	بردان این این این این شو فیونش هر این ه
25 mo1%	50 mo1% 75 mo	1%		20 50	2210 1080	12500 4270	91200 20700	742000 111000	
30 19.1 50 61.7	$\begin{array}{ccc} 11.2 & 5.3 \\ 37.2 & 17.8 \end{array}$			80 00	603 41 7	1780 1050	5960 3280	22400 9120	
75 224.0 100 631.0	144.0 61.0 479.0 235.0		.====						
بير هيي هيد جي بيون جيد جي ديريان و من جي حيد ال	رميان المنار المن المنار المنار المناز المنا	ين النام الذين عيده النبو -ب. وقد النام في حين النبو الناة الناء النام الذي الناء							
t 20%	d 40% 60%	80% 100%							
10 1.008	1.025 1.032	1.033 1.027							ļ
20 30 .002	.020 .028 .016 .020	.027 .019							
40 0,998 50 .993	.009 .013 .003 .006	.011 .003							
60 .987 70 .982 80 .976	0.999 0.999 .990 .991	0.995 .986 .988 .987							
80 .976	.983 .984	.980 .970	ı İ						
t	η								Ì
20%	50% 75%	100%							
20 1880 50 940	6170 16600 2570 5370	31300 9440	H H						
80 543 100 389	1200 2090 785 1250	31300 9440 3480 1950							
هر جنون کنند کنند کنند کنند که انتخاب کار با کار با کار با کار کار کار کار کار کار کار کار کار کا	سيار جيره شير حين بذين المواجهة التي التي التي تاريخ التي التي التي التي التي التي التي التي	بر این کارد آمیز برود کیم این بخواهی بری براه این برود کار برود این در این در این در این در این در این در این بر این این این این این در این در این این این برای در این در این در این در این در این در این در این در این بر این این این در این در این این این در این برای در این در این در این در این در این در این در این این در این ا							

					Water	+ Glycola	amide (C	₂ H ₅ O ₂ N)		
Water + Tri	ethanolamine	C6H150	3 N)		Stoke	s, 1954				
					Isopi	estic sol	utions			
Leibush an	d Shorina, 1	947			m ₁	m ₂	m ₁	fr	12	
%	30°	50°	75°	100°	0,1862	.1092	2.968		137 528	ی جو جو این این امیر شیخ سی جو جو جو این این
25 50 75 100	0.003 0.005 0.014 0.049	0.010 0.019 0.050 0.170	0.039 0.078 0.200 0.710	0.130 0.270 0.690 2.340	.2440 .2793 .3372 .4658 .5411 .8184	.1512 .1825 .2528 .2933 .4429	3.620 3.874 4.611 5.142 5.315	2	841 838 950 283 514 588	
%	30°	50°	'1 75°	100°	1.452 1.880	.7776 .9959		-	652	
25	21.9	64.6	204.0	661.0	1 = g	lycolamid	e ₂ =	potassiu 	m chlori	de
50 75	13.2 6.4	40.7 20.5	141.0 74.2	436.0 235.0						regain and and have gods our ours also also are to
×			d		Gucker	, Ford an	nd Moser,	1939-41		
	10°	20°	30°	40°	M	m	d	M	m	d
20 40 60 80 100	1.033 1.068 1.100 1.120 1.131	1.029 1.060 1.092 1.114 1.124	1.024 1.055 1.086 1.107 1.118	1.020 1.050 1.080 1.101 1.112	0.00000 .04992 .04993 .09985 .10038	.05022 .10071	.998038 .998025 .998966	0.51506	0.79050 1.06335 1.28900	1.006860 .011350 .015982 .019700
%	50°	60°	d 70°	80°	.19695 .19850 .30127	.30736	.000826 .000850 .002806	2.30190 2.85180 3.49520	2.65370 3.40960 4.36870	.040200 .050490 .062250
20 40 60 80 100	1.016 1.044 1.073 1.094 1.106	1.011 1.038 1.066 1.087 1.099	1.004 1.032 1.059 1.080 1.093	0.999 1.026 1.053 1.071 1.087	.30635 .40020 M		.002783 .004670			.062250 .080760
%	20°	50°	80°	100°	0.0000 .1985 .4002	0.0000 .2014 .4107	1.0000 0.9904 .9809	17 (19	1.00000 0.99223 .98444	1,00000 0,99297 .98588
20 50 75	2000 8510 64600 795000	988 3240 14800 123000	562 1450 4370 25300	407 923 2150 10500	.7547 1.1985 1.5994 2.3019	.7905 1.2890 1.7632 2.6537	.9651 .9461 .9 2 99 .9034	.9 19	.97109 .95467 .94048 .91666	.97332 .95808 .94475 .92229
100	د حجو الله معلى حود الله الله على حود الله الله الله الله الله الله الله الل	سال الله غير لين الله اللو لمر سي من الله الله غام كان لي الله الله عن من من ا الله الله الله عن الله الله الله الله الله الله الله الل	لد شان سان می سان شان می وی ر که کان شان این وی شان در بین وی وی در کان شان این سان در در در در در		3.4952 3.4952 4.5282	4.3697 4.3696 6.1124	0.8630	3	.87900 .87899 .84891	0.88612 0.85720
					=======				سی سے اسے کی میں سی افغاز اندی ہ سی سے اسی کسی سی سند افغا اندی ہ	ر فوی حدد کمر آمر جی حی مطالعه احد جین در سی آمر آمر آمر سی سی بین آمر آمر آمر
						bson, 195			من میں میں میں میں میں میں میں م	
					M 	sound v m/s	-	d		π
								20°		
					0.000 1.40 1.62		525.3 532.6	0.99 1.02 1.02	982 954 97	45.34 41.92 41.35

Water + Lactamide ($C_3H_7NO_2$)	Water + Morpholine ($C_4 H_9 ON$)
	Friedman, Barnard and al., 1940
Jacobson,1951	% d n o n _D
M sound velocity d π m/sec.	20°
20°	8.558 1.0057 1327 67.80 1.3447 9.740 .0069 - 65.45 .3460
0.000 0.9982 45.35 1.370 1540.6 1.0198 41.32	10.6903472 19.394 1.0137 1963 62.62 .3598
1.687 1552.2 1.0246 40.51	29.6593750 30.405 1.0236 3082 59.15 .3763
	37.004 .0305 4064 58.00 .3863 50.449 .0383 7227 52.85 .4066
Water + Trichlorolactamide (C ₃ H ₂ O ₂ NCl ₃)	65.479 - 11613 67.646 - 11865
mater Trento oraclamac (og napaners)	69.925 1.0425 12168 47.05 .4322 72.040 - 12128
Meldrum and Turner, 1908	80.136 1.0357 10433 43.62 .4428 91.000 - 5954 41.60 .4502
c b.t.	100.000 - 2282 38.72
14.6 100.355 13.2 100.325	
11.5 10.285 10.5 100.270	Trimble and Buse, 1941
	% d
	25° 30° 35°
Water + Malic amide 1 ($C_{f u}H_{B}O_{5}N_{2}$)	14.17 1.0066 1.0047 1.0026 21.97 .0128 .0105 .0083
	26.72 .0165 .0140 .0166 35.55 .0238 .0210 .0180 47.36 .0325 .0290 .0255
Timmermans and Vesselovsky, 1932	53.07 .0355 .0317 .0280 57.05 .0369 .0330 .0291
% f.t. % f.t.	72.67 .0352 .0308 .0264 84.05 .0249 .0204 .0158 89.65 .0164 .0119 .0073
4.8 -0.75 16.7 -2.45 9.1 -1.35 23.1 -3.55 13.0 -2.00 28.6 -4.20	89.65 .0164 .0119 .0073 100.00 0.9947 .9897 0.9850
E: -2.30°	
	Wheeler Jr., and Houle, 1954
	% п _D % п _D
	25°
	0.0 1.3327 70.3 1.4313 7.5 .3428 74.8 .4368 19.8 .3600 79.1 .4407
	28.9 .3734 82.9 .4448 39.9 .3899 87.1 .4471
	50.5 .4044 91.0 .4490 61.7 .4208 95.5 .4514 65.3 .4253 100.0 .4528

Trimble, Engle and al., 1942	Water + Strychnin tartrate ($C_{\mu_6}H_{50}N_{\mu}0_6$)
∜ U 0° 25° 50° 75° 100° 130°	Dutilh, 1912
100 0.475 0.477 0.486 0.498 0.514 0.538	f.t. % (d) % (r)
90	7.35 41.42 41.21 16 46.98 48.88 25 53.38 55.26 40 63.76 65.77
20 .892 .905 .919 .942 .972 .013	f.t. % (1) f.t. % (1)
10 .946 .952 .960 .971 .991 .016 0 1.008 .999 .999 1.002 1.007 .018	7.35 32,15 28 44.50
Water + Ammonium lactate ($C_3H_9NO_3$)	16 36.51 29 45.14 25 42.10 30 45.98 26 42.92 40 53.38 27 43.82
Costello and Filachione, 1953	
\$ d 20° 25° 40°	Water + Brucin acid tartrate ($C_{27}H_{32}N_20_8$)
0.0 - 0.9971 5.0 1.0132 1.0155 1.0066 15.0 .0412 .0385 .0346 28.8 .0810 .0788 .0730 46.4 .1288 .1249 .1198	Dutih1, 1912 f.t. % (d) % (1) % (r)
70.0 .1826 .1808 .1729 78.8 .2006 .1984 .1904	20 - 41.08 25 50.18 47.92 46.69 35 38.87 61.82 60.32 44 44.29 69.88 73.68
[%] n _D	44 44.29 69.88 73.68 50 48.11 76.63 79.08
20° 25° 40°	
0.0 1.3330 1.3321 -	Water + Cyclopentanol (C ₃ H ₁₀ O)
	Lecat, 1949
[%] 20° ⁷ 25° 40°	
0.0 1010 0800 - 5.0 1180 1040 0860 15.0 1530 1350 0970 28.8 2650 2170 1500 46.4 6280 520 3350 70.0 43050 32870 15350 78.8 150640 115000 46310	42 96.25 Az 140.85

Water + Cyclohexanol (C ₆ H ₁₂ O)	Sidgwick and Sutton, 1930
1040	
Lecat, 1949	\$ f.t. \$ f.t. \$ f.t.
8 b.t.	1.67 -0.3 88.3 -1.2 90.45 -4.9 3.33 -0.6 88.45 -1.1 91.20 -7.6
23 97.9 Az 100 160.8	3.33 -0.6 88.45 -1.1 91.20 -7.6 5.00 -0.9 89.0 -2.0 92.30 -10.2 90.08 -4.1 93.00 -15.4
Silberman, 1951	Timmer mans, 1949
sat.t. % sat.t. %	
L_1 L_2 L_1 L_2	95.3% (76 mol%) f.t. = -30 E -53
0 5.35 89.97 100 3.93 82.96 10 4.57 89.46 110 4.28 81.9	
10 4.57 89.46 110 4.28 81.9 20 4.00 88.93 120 4.7 80.7 30 3.60 88.37 130 5.3 79.3	
40 3.33 87.77 ¹⁴⁰ 6.1 76.4	No. company of the land
$ \begin{bmatrix} 60 & 3.10 & 86.42 & ^{160} & 8.8 & 70.5 \\ 70 & 3.19 & 85.64 & 170 & 11.5 & 63.8 \end{bmatrix} $	Water + Cyclic alcohols.
80 3.41 84.83 180 17.8 52.9 90 3.65 83.93 184 33.9 33.9	Lecat, 1949
C.S.T.	Name Formula Az
	b.t. % b.t.
Sidgwick and Sutton, 1930	Methylcyclo- (C ₇ H _{7&0}) 168.5 18 98.4 hexanol
	Linaloo1 (C ₁₀ H ₁₈ O) 198.6 - 99.7
% sat.t. % sat.t.	Benzyl (C ₇ H ₈ O) 205.25 9 99.85
3.18 40.45 and 70.45 8.14 121.95	alcohol
3.19 45.80 " 66.30 9.22 156.90 3.26 40.40 15.0 174.30 3.37 31.85 and 82.40 19.2 179.40	
3.41 33.60 32.4 184.72	
3.52 27.55 52.3 183.66 3.57 28.7 59.4 180.10 3.75 24.6 68.0 169.70	Water + Terpinol ($C_{10}H_{20}O_{2}$)
3.75 24.6 68.0 169.70 3.82 20.8 68.5 168.64	
3.82 20.8 68.5 168.64 3.95 20.6 70.1 163.03 4.09 16.3 74.6 150.35 4.23 14.2 80.2 130.90	Clavera, 1922
	%(1+1)f.t. m.t. %(1+1)f.t. m.t.
1 4.55 12.0 86.75 71.50	0 104.7 104.7 60 117.8 107.1 10 117.6 104.3 70 118.1 110.7
4,58 9.7 87.9 51.55 4.78 9.4 5.00 7.2	1 20 118.1 104.5 80 117.9 113.8
3.00 /.4	40 117.9 104.8 90 118.3 116.8 50 118.2 106.6 100 118.2 118.2
de Forcrand, 1912	
% f.t. % f.t.	
88.73 -12.05 95.17 -55.70	
90.36 14.58 95.91 46.80 90.98 18.50 96.87 34.10	
91.96 33 98.82 -1.40 93.15 43.2 99.77 +17.48	
95.03 -57.4 E 100.00 +22.45	
رسو نود در در در موسود نود نود نود نود نود نود در در خود نود ند ند نود نود نود نود نود نود نود	

Water + Benzyl alcohol (C ₇ H ₈ O)	Water + Tetrahydrofurfuryl alcohol ($C_5H_{10}O_2$)
Hückel, Niesel and Buchs, 1944	Clendenning, 1948 (fig.)
$egin{array}{cccccccccccccccccccccccccccccccccccc$	* f.t.
20 3.92 95.14 40 4.14 92.79 25 3.98 94.73 45 4.196 92.45 30 4.07 93.91 50 4.194 92.08 35 4.105 93.42 55 4.365 91.38	0 0 40 -13,5 10 -1.5 50 -20 20 -4 60 -30 30 -9 70 -43
t mo1% σ t mo1% σ	\$ d \$ d 20° 37.8° 20° 37.8°
20 76.5 40.08 45 - 37.51 30 71.8 37.94 50 63.0 36.895 35 70.2 37.72 60 - 34.49 40 68.3 37.65	0 1.0 1.0 70 1.058 1.048 20 1.021 1.018 80 1.060 1.0505 40 1.042 1.032 90 1.0595 1.050 60 1.054 1.044 100 1.057 1,047
	% Dv(%) % Dv(%) 20° 37.8° 20° 37.8°
Water + β -Phenylethyl alcohol ($C_BH_{1o}O$)	40 2.01 1.97 80 1.475 1.41 60 2.13 1.91 90 0.870 0.86
Huckel, Niesel and Buchs, 1944	π * π * π *
t % t %	20°
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 1000 80 7400 20 1950 90 7400 40 3400 100 5950 60 5500 * kinematic viscosity, in centistokes, 103
	g n _D g n _D
	25°
Water + m-5 Xylenol (C _B H ₁₀ O)	40 1.3834 90 1.4411 60 1.4080 100 1.4507 80 1.4309
Megson, 1938 g sat.t. L g sat.t. L	
88,00 84,4 0.62 22.8 88,50 77.0 0.82 37.8 89,20 66,8 1.00 52.0 89,55 62.0 1.17 64.8 89,89 56.0 .41 78.8 90.00 51.4 .60 89.7 90.50 43.4 .80 94.7 91.00 43.6 2.01 98.0 91.42 44.1 91.97 45.0 92.90 46.0 93.75 47.4 94,95 49.7 96.01 51.8 96.95 54.0 97.81 56.4 99.06 59.9 100.00 63.5	

WATER + GLUCOSE

	p b.t.
T. WATER + SUGARS, PHENOLS AND ORGANIC ACIDS	p b.t. 40% 50% 60%
LXIII. WATER + SUGARS Water + Glucose (C6H12O6)	187.57 66.624 67.555 69.045 233.72 71.670 72.625 74.137 289.13 76.718 77.697 79.235 355.22 81.767 82.772 84.338 433.56 86.818 87.849 89.446
	II 575 06 NI 971 NA NAN NI 640
Heterogeneous equilibria	906.06 108.183 107.042 109.935
1055	1074,58 113,273 112,102 115,070 1268,03 118,365 117,163 120,212 1489,14 123,460 122,225 125,359
Taylor and Rowlinson, 1955 mol% p mol% p	
و شوا من هي جي جي جي هي جي من جي جي هي هي هي هي هي هي هي هي هي هي هي من جي هي هي هي هي من من هي هي هي هي من من هي هي هي هي هي هي هي هي هي هي هي هي هي	
25.0°	Osmotic pressure
0 23.756 9.50 21.117 1.18 23.476 10.91 20.668 5.08 22.563 13.04 19.943 7.61 21.727 15.98 19.002 9.34 21.151 19.50 17.751	Berkeley and Hartley, 1906
0 42,175 12,12 36,097	00
7.61 38.666 13.05 35.484 7.61 38.590 16.01 33.619 9.51 37.504 19.54 31.585 10.93 36.781	9.98 13.21 19.95 29.17 31.92 53.19 44.86 87.87 54.86 121.18
0 71.88 10.95 62.74	
7.63 65.86 13.08 60.59 7.63 65.80 16.03 57.80 9.53 63.95 19.59 54.11	Morse, Frazer and Lovelace, 1907
0 118.04 13.10 100.12	m t P m t P
7.63 118.15 16.06 95.24 9.55 105.18 19.62 89.19 10.96 102.97 65.0°	0.1 24.10 2.39 0.7 22.26 16.82 .1 25.10 2.42 .7 25.43 16.96 .2 24.10 4.76 .7 22.70 16.75 .2 24.93 4.77 .8 23.00 19.27 .3 22.20 7.12 .8 23.28 19.16
0 187.54 13.13 159.45 7.63 172.06 16.11 151.57 9.53 167.69 19.69 142.34 10.98 163.98	3 23.48 7.17 .8 23.64 19.25 4 26.90 9.70 .9 23.80 21.64 4 26.60 9.65 .9 22.58 21.49 5 21.86 12.07 .9 23.10 21.63 5 24.17 12.00 1.0 22.20 24.12
	.6 22.57 14.56 .0 22.60 24.00 .6 22.40 14.32 .0 22.10 24.03 .6 22.30 14.29
	• • • • • • • • • • • • • • • • • • •
Torgesen, Bower and Smith, 1950	
p b.t. 0% 10% 20% 30%	Morse, Frazer and Rogers, 1907
187.57 65 65.277 65.600 66.047 233.72 70 70.280 70.615 71.073 289.13 75 75.284 75.631 76.101	m t P m t P
289,13 75 75,284 75,631 76,101 355,22 80 80,289 80,648 81,130 433,56 85 85,295 85,666 86,161 525,86 90 90,302 90,685 91,194 633,99 95 95,310 95,705 96,229 760,00 100 100,319 100,726 101,265 906,06 105 105,329 105,748 106,303	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
1074.58 110 110.340 110.771 111.343 1268.03 115 115.352 115.793 116.385 1489.14 120 120.365 120.819 121.428	

Morse and He	olland, 1908	ت الله الله الله الله الله الله الله الل		Jackson a	and Silsbe	1, 1922		
m P	m	P		,	f.t.	%	f.t.	, غنو اسر سيو غني ليي ليي ليي غير عبر
	10.0° 39 0.6 76 .7 11 .8 52 .9 91 1.0	14.31 16.70 19.05 21.39 23.80		31.75 35.2 49.37 52.99 54.64 58.02 62.13 62.82 65.71 70.91	-5.3 E +0.50 (22.98 28.07 30.00 35.00 40.40 41.45 45.00 +50.00	1+1) 66. 67. 67. 69. 73. 76. 78. 81. 84.		(0+1)
Abegg, 1894					ہیں کی کی جب کی حدودہ احدوات اور بین جی حدودہ جدودہ جدودہ سال احدادہ		نین این این کی کین این این این این این این این این این ا	
M f.	t. M	f.t.						
	1,399 040 2,100 135 2,782	-3,250 -5,605 -8,710		Properti Tollens,	es of phas	ses .		
در الله الله الله الله الله الله الله الل	سی میں میں ایک سی اسی ایک ایک ایک ایک ایک ایک ایک ایک ایک ای	ند جه الحور حدد مهر حدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد ا عدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحد		%	d	**************************************	d	
					17.	.5°	و هېر مي سي سي شي شي شي مد جه دي شي شي	
Roth, 1903	نے میں میں میں میں میں میں میں میں میں میں			7.6819	1.02871	31.6139	1,13408	
8 M	f.t.	я <u>м</u>	f.t.	7.6819 9.2924 9.3712	.03549 .03597	40.7432 43.9883	.17763 .19397	
1.254 .00 1.769 .10 2.333 .13	470 -0.0870 705 -0.1313 000 -0.1863 326 -0.2475 314 -0.4337	6,839 0.4076 9,866 .6077 14,190 .9178 16,560 1,1020	_0.7719 _1.1573 _1.7542 _2.1174	10,0614 10,6279 12,9508 18,6211	.03881 .04091 .05076 .07482	48.8667 53.0231 86.6111	.21925 .24125 .41363	
	البيدانية التي التي التي التي التي التي التي التي			Hammersc)	hmidt, 188	9		
	and Jones and			*		d		
	t. M	f.t.			20°			
0.2 -0. .3 -0. .4 -0. .5 -1. .6 -1.	385 0.7 574 .8 780 .9 023 220	-1,430 -1,690 -1,930		18.0569 22.7257 23.7083	========	1.07129 .09164 .09586	هي هن ليو اين شو جو جو اين اليو اين اين اين اين اين	
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				W	-aa 1004			
Morse, Frazer	and Lovelace	, 1907			off, 1894	. حد د س. من من من من من من من من من من من		,
m f.	t, m	f.t.		<u> </u>	20°	dd	ے ب _{یا} ہے ہے سے شہر اس اس اس اس اس اس اس اس	
0.1 -0. .2 -0. .3 -0. .4 -0. .5 -0.	576 .8 762 .9	-1.147 -1.337 -1.528 -1.720 -1.918		0 5,19 10.09 15.85 32.35	20-	0.99823 1.01880 .03806 .06143 .13586		

Brown, Morris and Millar, 1897	Varga, 1911
% d	% d % d
15.5° 2.61 1.00916 5.84 .01998 6.38 .02410 10.52 .04095 15.52 .06192 17.64 .07101 22.80 .09362	18° 0.3834
Rimbach, 1902	Jackson, 1917 % d % d
% d	20°
20° 0 0,9982 5,078 1,0181	6.5 1.02361 23.5 1.09524 12.5 .04799 28.9 .11963 18.5 .07329
10.041 .0380 17.606 .0696 20.139 .0804 30.022 .1251	Pulvermacher, 1920
	% d % d
Jones, 1904 and Jones and Getman, 1904 M.d. M.d.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
0° 0.2 1.011240 0.7 1.045444 .3 .017648 .8 .051276 .4 .024980 .9 .058848 .5 .032768 1.0 .063308 .6 .038156	Taylor and Rowlinson, 1955
.5 .032768 1.0 .063308 .6 .038156	25.0° 45.0° 65.7°
Morse, Frazer and Lovelace, 1907	0.2443 1.0160 1.0057 - .5061 .0296 .0213 1.0111 .7765 .0455 .0370 .0270 .9863 .0575 .0472 .0386 1.993 .1064 .1004 .0870 3.955 .1776 .1686 .1566 6.156 .2347 .2247 .2140 8.403 .2767 .2659 .2584
m d m d	1 10.44 .3037 .2947 .2813
0° 0.1 1.00687 0.6 1.03945 .2 .01376 .7 .04551 .3 .02041 .8 .05143 .4 .02691 .9 .05731	12.36 .3260 .3150 .3023 14.45 .3470 .3342 .3224 16.96 .3646 .3532 .3396 18.25 .3749 .3627 .3508 21.00 .3857 .3751 .3612
.5 .03327 1.0 .06300	
	Vanecek, 1956
	% d % d
	29.376 1.12183 70.663 1.33940 39.656 17114 76.283 .37087 50.536 .22585 83.020 .41320 61.134 .28678

Viscosity and surface	tension						
- Tibeostey and Surrace	- tension .		Kanonniko	ff, 1894	د حن اند اند اند اند اند اند اند اند اند		
			8		n _D		
Powell, 1914	و على خب طبي على الله الله على الله القياملية على الله المتالية	ن سن سن سن سن من من سن سن سن سن		20°			
25° 30° :	n 35° 40° 45°	50°	0 5,19 10,09		1.33298 .34069 .34796 .35679		
18.65 1603 1401 12 27.06 2255 1964 12 34.92 3368 2901 24 42.30 5293 4430 32	929 841 761 235 1100 987 712 1516 1344 490 2182 1918 770 3236 2809 055 5132 4325	698 894 1208 1712 2466 3735	10.09 15.85 32.35	ر های استود	.35679 .38459	========	:::::::::::::::::::::::::::::::::::::::
ر میں میں میں میں میں میں میں میں میں میں	ن میں میں جمین جمید جمید میں میں انہوں میں جمیر میں جمید جمیر میں میں انہوں امام اسام الحد اللہ اللہ نے میں میں جمیل جمید جمید جمید جمید میں امور امیر حمی جمید جمید بھی اسے امور آئیں۔	ن کی کی کی کی کی کمی اللہ اللہ اللہ اللہ اللہ اللہ اللہ الل	Wagner, 1				
Pulvermacher, 1920			X 	ⁿ D	% 	n _D	، حد حد حد حد صر اس من من من من من من من من من
	% η(water=1)		0	1 22220	7.5° 11.551	1.34947	
25° 0 1.000 10 1.00 .027 15 2.11 .062 20 4.63 .131 24	پر انتین انتین انتین میں شین شین باشد انتیاز نظام انتین انتین آخی انتین آخی انتیاز انتیاز انتیاز انتیاز انتیاز		0.270 0.540 0.810 1.080 1.350 1.620 2.160 2.430	.33358 .33397 .33435 .33474 .33513 .33551 .33590	11.817 12.083 12.349 12.615 12.881 13.147 13.413 13.678 13.678	34984 .35021 .35058 .35095 .35122 .35169 .35205 .35242 .35279 .35316	
Varicak, 1921			2.969 3.238 3.507 3.776	.33667 .33705 .33743 .33781 .33820 .33858	14.207 14.471 14.736 15.000 15.265 15.529 15.794	.35352 .35388 .35425 .35461	
	(water ^t =1)		4.045 4.314 4.583	. 33896	15.529 15.794	.35497 .35533	
M 0.1 0.25	0.5 0.75	1.0	4.583 4.852	.33934 .33972 .34010	16.058 16.321 16.584	.35569 .35606	
5 1,212 1,363 10 .024 .210 15 .048 .197 20 .027 .186 25 .047 .198 30 .049 .199 35 .013 .169 40 .020 .167	1.450 1.739 .329 .526 .266 .476 .289 .447 .324 .447 .294 .464 .237 .411 .188 .414	1.889 .637 .611 .621 .588 .597 .528 .514	5.121 5.390 5.659 5.928 6.197 6.466 6.735 7.004 7.273 7.542 7.811	.34048 .34086 .34124 .34162 .34199 .34237 .34275 .34313 .34350	16.584 16.846 17.109 17.372 17.634 17.897 18.160 18.423 18.685 18.945 19.205	.35642 .35678 .35714 .35750 .35786 .35822 .35858 .35894 .35930 .35966 .36002	
Ghosh and Gyani, 1953			8.080 8.347 8.615 8.882	.34426 .34463 .34500 .34537 .34575 .34612	19.465 19.725 19.985 20.245 20.505 20.765 21.025 21.285	.36038 .36074 .36109 .36145	
	η (water=1)		9.149 9.417	.34650	20.505 20.765	.36181 .36217 .36252	
سر مين جي دين جي جي دين هنوانين الله جي جي مين جي اين جي دين دين القرامي جي مي سي اسر الم الرد !	9.684 9.951	.34687 .34724 .34761	21.025 21.285 21.542	. 36287 . 36323			
9.60 14.40 25.56 2,0	1185 1625 1470 1256 1050		10.218 10.486 10.753 11.019 11.285	.34761 .34798 .34836 .34873 .34910	21.542 21.799 22.056 22.313	.36359 .36394 .36429	
=======================================		======					

Pulvermacher, 1920	Kreinin, 1945
$% n_{\overline{D}} $ $% n_{\overline{D}} $	76 н 76 н
25°	19° sound frequency
0 1,3325 10,20 1,3486 1.00 .3351 15,72 .3575 2.11 .3366 20,14 .3646 4.63 .3401 24,03 .3710	0 0.07 30 0.10 10 .13 40 .08 15 .14 50 .05 20 .13 60 .03
Tollens, 1876	% w.l. (in cm) 30.57 42.0 49.1 68.2
% (α) _D % (α) _D	19°
17.5° 7.6819 53.35 31.6139 53.64 9.2924 53.00 40.7432 54.35 9.3712 52.79 43.9883 54.67 10.0614 53.02 48.8667 54.62 10.6279 52.97 53.0231 55.16 12.9508 53.17 86.6111 57.70 18.6211 53.40	0 28 15 10 5 20 42 25 18 10 40 68 44 35 18 60 110 80 62 32 N.B. The authors give also curves for w.1.= 143.6, 191.8, 236.3, 308.6, 375.6, 438.2 and 498.4
Hammerschmidt, 1889 % (α) _D 20° 18.0569 52.97 22.7257 53.07 23.7083 53.20	Furth , 1923
Jackson, 1917	
β (α) 5461	Malmberg and Maryott, 1950
20°	% ε 20° 25° 30°
6.4503 62.306 12.9005 62.581 19.3510 62.855 25.8010 63.129 32.2515 63.404	0 80.38 78.54 76.76 5 79.17 77.37 75.64 10 - 76.14 - 15 15 76.56 74.80 73.11 20 73.43 - 30 72.13 70.46 68.82 40 68.73 67.11 65.56 50 64.90 63.39 61.91

						
Heat constants	Water + Levulose ($C_6H_{12}O_6$)					
	Abegg, 1894					
Pryor and Roscoe, 1954	М	f.t.	M	f.t.		
% velocity of sound (m/sec.) 20° 40°	0.554 1.065 1.385	-1.115 -2.35 -3.21	2.13 2.77	-5.63 -8.42		
0 1479 1527 34.9 1654 1678 49.3 1757 1767 70 1939 -	Jones, 1904	and Jones and	d Getman, 190	04		
		M				
Telkessy, 1911	0.2 -0.38 .3 -0.61	34 0.6 0 .7 10 .8 4 .9	-1.265 -1.535			
% U % U	.4 -0.83 .5 -1.05	1.0	-1.765 -2.033 -2.300			
at room temp. 5.200 0.9641 30.854 0.8293 10.468 .9350 41.384 .7748 21.061 .8796 52.365 .7194	Jackson, Sil	sbee and Pro	ffitt, 19 2 6			
	f.t.	<u>\$</u>	پر جور سی میں میں امیا میں امیا جو جو میں امیا جو جو جو			
Taylor and Rowlinson, 1955	20 40 55	78.94 84.34 88.10	4			
m U m U		ے اپنے کیے میں نہیں ہوں ہے۔ و کے کیے کیے کے خوا کے اپنے میں بھی اس کی خوا کی د				
25°	Young, Jones	and Lewis,	1952			
0 1 6 0.705 2 0.85 8 0.675 4 0.76	T.	f.t.	*	f.t.		
m Q dil initial final (by mole glucose)	0.0 10.0 20.0 30.0	- 1.3 - 2.7 - 4.75	40.0 50.0 60.0 69.2	- 7.65 -12.30 -19.35 -30.40		
25° 5.046 4.5 -20 5.046 4 -50 5.046 3 -100	73.7 74.7 77.0	- 3.85 0.0 +10.0	ulose 79.4 81.9 84.3	+20.0 +30.0 +39.4		
5.046 2 -170 5.046 1 -240 5.046 0.5 -280 5.046 0 -340	69.05 72.55 10.0	-10.35 0.00 +75.95	20.0 27.9	+79.40 +82.05		
	44.70 49.10 54.05 59.10	- 9.7 E - 5.0 0.0 + 5.0	79.7 83.3	+10.0 +15.0 +20.0 +21.3		
	47.55 49.85 54.80 59.85	- 7.35 - 5.0 - 0.0 + 5.0	65.60 71.85 73.60	+10.0 +15.0 +16.3		
	62.5 65 67 69	-20 -15 -10 - 5	72 74.5 78	0 + 5 +10		

Wonig o	nd Jetter.	1990									
Hollig at		1	Æ		đ	Holty,	1905				
			7.5°			78			d 		
6 7 8 9 10 11 12	. 03 . 03 . 04		16 17 18 19 20 21		1.06503 .06950 .07380 .07825 .08253 .08700 .09137	7.60 12.61 18.49	26°	1.	0298 0505 0755	ن د مشاعل الله الله الله الله الله الله الله ا	ة النام الله الله الله الله الله الله الله ال
13 14 15	. 0.	5175 5620 5053	22 23 24 25		09588 10030 10488		·, 1913	بير ندر شير شير شير شيرانس .		نب شبر ضدر متواجعت الله الله الله الله الله الله	. هند احد احد احد احد احد احد احد احد
						 	209				
Jones, 19	904 and Jo			1904		20.07 20.19	71 97		.0 7 916 .0 7 940		
0.2 1. .3 .4 .5	0° ,014076 ,021260 ,029224 ,035644	0.6 .7 .8	1.04338 .04742 .05632 .06316 .07179	0 4 0		Jacks	son and Ma	thews, 19	932		
.5 .	. 035644	1,0	.06316	0 6		Я		d 25°	Z		d 25°
5.2	d	8.	51%	1	1.67% 1.04544	2.633 5.591 8.998 9.534 13.485 15.345 17.223 17.229	.02041 .03437 .03656 .05318 .06119 .06937	.05164	17.290 17.952 24.452 31.255 40.831 50.655 60.087 69.152	1.06965 .07259 .10176 .13353 .18112 .23303 .28591 .33921	1.06790
20.9		29.5 39.7 76.2 91	.02707 .02488 .00542 .00140	41	.03945 .03416		ki and Yan				
20	1.08368	20.	1.11119	20	1.17930	t	50%	d 60%		80%	
30 41.5	.08368 .07899 .07603	30.5 41.8 44	.10604 .10091 .10079	30 38.5 43 48.5	1.17930 .17485 .16976 .16730 .16411	10 15 20 25 30	1.2357 .2328 .2301	1.2927 .2896 .2860 .2823 .2792 .2721	1,3452 .3424 .3378 .3303	1.4068 .4025 .3990	
Brown, Mo	rris and l	Millar,	1897			40 50 60 70	.2242 .2176 .2106 .2036 .1962	.2721 .2647 .2574 .2498	.3303 .3227 .3145 .3062	.3915 .3832 .3744 .3661	
*	d	K	d	-,-,-,-	ه الهائد أمر نبيه ليهامي من بين ألف مند لهن	80 90	.1890 .1824	. 2415 . 2343	.2979 .2906	.3584 .3502	
0 2.45 6.13 6.38 7.35	0,9990 1,0087 .0237 .0246	6 12. 0 15. 7 20.	.51 .05	4885 5035 6405 8606	and and and and and an are not an artist	N.B.	There is a	a confusi			in
7,35	.0286	9	و حدو حدود حدود الدو الدو الدو الدو الدو الدو الدو ا							- 115	

Powell, 1914	Herzfeld, 1884
% п 25° 30° 35° 40°	t (α) _D t (α) _D
9.57 1307 1152 1027 913	5.22 \$ -67.62
18.48 1764 1549 1361 1195 26.94 2445 2127 1851 1624	8.51 % 12.0 -73.81 40.5 -58.98 20.0 -69.31 76.2 -43.57
34.79 3608 3061 2616 2257 41.15 5627 4717 3940 3345 49.04 9563 7802 6397 5306	29.5 -64.80 91.0 -34.94 39.7 -59.72 11.67 \$ 20.94 \$
	20 -70.07 20.0 -70.61 29 -65.57 30.0 -65.81 41 -59.65 41.5 -60.09
	41.35 % 20.0 -72.10 43.0 -58.36 30.0 -66.95 48.5 -55.67 38.5 -59.34 83.14 %
Jackson and Mathews, 1932	38.5 -59.34 83.14 % -76.00
% n _D 20° 25°	
0 1.33300 1.33252 4.862 .34001 .33949	, , , , , , , , , , , , , , , , , , , ,
l 4 961 .34016 -	Hönig and Jetter, 1888 f t $(\alpha)_{D}$ f t $(\alpha)_{D}$
8 416 34528 - 8 618 34560 1.34500 11.855 34043 34985 15.151 35557 35494	
18,944 .36157 .36094 19,098 .36185 .36115	4.7541 12 -94.352 20.2446 12.0 -98.775 9.0870 12.9 95.295 23.4979 9.0 101.487 - 15.4 93.526 - 14.4 97.544
26.948 .37503 - 30.912 .38197 1.38104	- 15.4 93.526 - 14.4 97.544 - 20.2 90.418 - 20.6 93.562 - 30.4 83.468 - 33.5 84.294 - 39.9 77.157 - 44.6 76.877
31 168 .38239 .38162 31 300 .38259 - 40 906 .40035 1 .39932	4.7541 12 -94.352 20.2446 12.0 -98.775 9.0870 12.9 95.295 23.4979 9.0 101.487 - 15.4 93.526 - 14.4 97.544 - 20.2 90.418 - 20.6 93.562 - 30.4 83.468 - 33.5 84.294 - 39.9 77.157 - 44.6 76.877 17.1421 15.4 95.867 39.3379 16.6 -100.645 - 20.2 92.524 - 35.2 -82.572
41.001 .40046 .39950 41.093 .40059 .39958 50.212 .41856 .41758	=======================================
51,036 .42030 - 58,125 .43510 1.43398 60,488 .44013 .43894	Holty, 1905
69.166 .45964 .45845 75.246 .47383 .47261 75.838 .47524 .47399	g (a)D
78.664 .48188 .48046 82.321 .49062 .48945	26°
82,390 .49093 .48967 85,930 .49954 .49823 86,826 .5019 -	7.60 -87.30 12.61 -87.78 18.49 -88.51
88.073 .5052 1.5038 88.601 .5065 .5051 88.991 .5073 .5060	18,49 -88,51
89 321 .5082 .5069	
	Winter, 1913 (α) _D
	β (α) _D
.	20.071 -71.47
	20.197 -71.43

	The state of the s
pl	Water + Galactose (C ₆ H ₁₂ O ₆)
Fürth, 1923	
	Berkeley and Hartley, 1906
20°	c osmotic P
0.0 80.5 28.6 45.0 9.1 71.5 33.3 41.0 16.6 64.5 37,5 34.5	0°
16.6 64.5 37,5 34.5 23.1 54.0	25 35.5
	38 62.8 50 95.8
	50 97.3
Slevogt, 1939	
	Kanonnikoff, 1894
Absorption and dispersion for different electric waves in 78 % solution .	% d
waves in 70 % solution .	20°
	0 0.99823 5.14 1.01861
!	9.72 .03786 20.09 .08262
Kreinin, 1945 (fig.)	29.31 .12300
% и % и	
19° sound frequency	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Pulvermacher, 1920
10 .20 50 .12 20 .23 60 .08 30 .21	
,21	% d % d
% к	25°
w.l. (in cm) 30.57 42.0 49.1 68.2	0 0.9971 4.60 1.0150 1.15 1.0012 9.12 .0335
19°	2.30 1.0058 18.24 .0730
0 34 15 10 5	
20 48 22 15 8 40 62 36 24 14 60 118 68 58 30	
1	Riiber and Minsaas, 1926
N.B. the authors give also curves for w.l.= 143.6, 191.8, 238.4, 308.6, 375.6,	c d c d
438.4 and 498.4	20°
!	0 0.998232 10.4466 1.039149 5.5072 1.019876 17.7614 .059759
	5.5072 1.019876 17.7614 .059759 9.8060 1.038114 21.6055 .082241
	Pulvermacher, 1920
	% η(water=1) % η(water=1)
	25°
	0 1 4.60 1.125 1.15 1.031 9.12 1.283 2.30 1.062 18.24 1.748
	2.30 1.062 18.24 1.748
!	

Kanonnikoff, 1894	Water + Saccharose ($C_{12}H_{22}O_{11}$)
% n _D	Heterogeneous equilibria
0 1.33298 5.14 .34067 9.72 .34760 20.09 .36421 29.31 .38008	Equilibrium L + V
	Wüllner, 1858
	t P 0% 33.33% 50.00% 60.00%
Pulvermacher, 1920 7	29.2 30.13 28.64 27.45 26.16 34.9 41.59 39.71 37.82 36.03 39.3 52.89 50.81 48.92 46.74 40.1 55.20 52.82 50.54 48.35 42.7 63.35 61.07 58.59 56.16 44.2 69.59 66.92 64.14 61.36 47.2 79.91 76.94 73.67 70.50 51.6 99.58 95.72 92.35 88.29 53.8 110.88 - 103.66 99.89 556.0 123.24 118.20 113.49 108.20 61.5 159.50 153.57 147.54 141.01 66.8 202.60 195.59 188.67 181.06 69.3 226.14 217.95 210.34 201.26 73.1 266.29 277.31 249.30 239.62 77.7 322.84 311.48 300.86 290.40 80.4 360.49 348.64 336.44 322.64 81.4 375.34 363.60 350.84 339.44 93.6 409.81 396.51 382.91 369.03 88.5 496.15 - 464.95 449.20 90.9 543.72 527.29 509.58 491.87 95.1 636.12 - 596.92 575.66 96.7 674.60 653.48 630.87 606.29 100.9 784.83 761.07 735.04 704.98
	Smits, 1897
	m p m p
	0° 0 4.57900 0.77912 4.51415 0.02138 .57722 0.88210 .40447 .04(30 .57512 1.02(02 .57(81 .08488 .57195 1.17225 .5(421 .17287 .5(4(0 1.45413 .53928 .28340 .55534 1.08110 .48826
	Mikhailenko, 1901 % p N % p N
	50° 0 92.6 0 21.06 91.3 0.7801 4.478 - 0.1370 38.84 89.0 1.8560 11.500 92.5 .3800 46.74 87.6 2.5660 14.140 91.85 .4817 52.31 85.8 3.2070

							,				
Perman,	1905					Berkel	ey, Hartle	y and Bur	ton, 1919) - 	
,	K		p				%		P		_
		0) % 	sol		 			0°	30°	
			at t	p°		1	0		68	95 27	
	.28	73 75	33.3 54.8	727 740			25.4 36.1		44	47	
							44.8 52.8		00	$\begin{array}{c} 73 \\ 108 \end{array}$	
Tower,	1008						58.5 64.7	18	35 37	143 199	
10461,	1 / 5 8	t					68.5 70.8	23	-	249 264	
				р		<u> </u>					
	0 6.19	15. 15.	. 5	12.790 12.743			%		0°	/p 30°	
	20.42 25.49	15. 15.	. 0 . 0	12.618 12.556		 					
							25.4 35.1	1	.03587	1.019/ .0350	
]] [[$\frac{44.8}{52.8}$.05530 .08315	. 0540 . 080	53
Krauskop	of, 191	0					58.5 64.7		.11272 .15868	.1082	73
Z		р	%		р		58.5 70.8		.19 837 .22912	.102	
0			.0° 28.57		53.34	ļ					
16.67		54.38 53.76	37.50		55.34						
	====					Porman	and Cauma	1022			
Perman a	and Pri	ce, 1912				- Ferman	and Saunde				
c	t	р	С	t	p	% %	p	%	<u>p</u>	در مرمر مد مر مرمر میرمر	
38,97	70.14	228.6	29.28	90.03	516.33		70°	9	90°		
39.46	70.14 70.10	228.6 227.4 223.5	38.71	90.03	510.00 493.82	11.99 13.40	231.8 233.0	14.19 15.39	523.8 522.6		
52.90	69.97 70.08	224.4 213.1	57.99 77.71	90.00	469.38 386.25	14.06 16.13	232.0 231.6	19.49 24.36 37.21	521.0 517.5)	
	90.02	521.0		70,00	000.20	16.54 21.74 21.78	232.1 230.8	37.21 39.35	508.4 507.3	4	
						21.78 27.37	231.0	39.35 40.18 41.74	507. 504.	1	
Wood, 19	16					31.39	228.8 228.4 226.9	46.45 51.97	500.	0	
t	p	t	p			37.13 45.20	226.6 222.0	57.54 59.43	492.4 481.3	5	
09						49.49 50.30 54.12	219.3	60.54 60.81	476.3 474.	6	
	138.	4 60.4		0		54.12	219.8 216.9	60.73	472. 472.	0	
58.49 62.35 65.19	165. 188.	8 63.3 7 66.0	39 165. 12 184.	8 7		55.18 62.36	215.5 207.6	65.44 65.70 67.60	458. 456. 445.	3 2	
68.68 72.13	219. 254.	6 72.9 7 73.2	5 247. 3 262.	8		64.93 67.52	204.8 202.1	69.26	442.	5	
77.32 80.14	317. 355.	0 80.4 6 82.7	2 344. 8 373.	9		(8.60 68.68	$199.0 \\ 195.3$	69.26 73.28 75.71 76.77	422.4 394.1	7	
84.91 89.04	429. 503.	1 84.8	6 401,	0		68.88 73.05	191.4 188.8	76.77	385.	7	
61.	.02%	•	69.20%								
62.98 67.51	151. 186.	8 59.0 9 62.9	112. 136. 173.	7 0		Monda	in-Monval,	1925			
73.08 78.55 83.35	237. 298.	9 62.9 5 68.2 6 73.9	173. 222.	5		t			p		
83.35 87.61 90.85	298. 363. 429. 485.	8 75.1 3 78. 8	235. 276.	0 8				0 %	60 %	67 %	59 🐔
90.85 9 2. 66	485. 527.	8 84.9 1 89.1	359. 416.	4 4		31.6 47.3	Ş	34.87	30.68	29.43	-
	·	92.0	464.	4		47.3	8	30.45	72.68	69.86	68.66
											

Fricke	, 1927				Dunning,	Evans and Taylo	r, 1951	
1	nol %		p		t	p	t	p
		0°	10°			4.1043 mol %	44.85 wt %	
	92.8 90.9 89.0 86.1 79.4 66.2 28.5	3.620 3.854 3.994 4.122 4.290 4.420 4.501	7.29 7.76 8.04 8.30 8.53 8.89 9.06	3 1 1 8 2	65.09 65.26 70.08 70.39 74.98 75.29 80.08	179.38 180.68 222.77 226.16 274.70 277.76 338.90	80.29 84.97 85.37 89.86 90.28 94.89 95.14	341.61 412.38 417.80 498.28 505.56 601.29 607.33
					(0.20	4.1077 mol %	44.87 wt %	340.90
Downes and Perman, 1927			60.20 64.89 65.21 70.07 70.46 74.98	143.145 177.75 180.06 222.95 227.05 274.18	80.21 84.73 85.07 89.85 90.27 94.47	407.99 413.09 497.90 505.67 592.83		
	Р	% p 40°		p	75.34 79.49	278.61 338.35	95.36	612.96
0.0 10.53 11.40 23.16 35.26	55.16 54.54 54.27 54.16 53.55	47.32 53.04 61.80 51.77 64.63 51.33 69.24 51.22 50° 36.04 89.55	69.24 78.02 78.02 93.26	51.16 50.00 50.12 46.51	60.17 60.40 64.88 65.24 70.10	7.0135 mo1 % 136.02 137.63 169.37 171.73 213.00	58.90 wt % 80.07 80.36 84.77 85.04 89.84	323 . 25 327 . 18 389 . 45 394 . 21 474 . 15
10.51 22.32 27.25 27.49	91.79 91.74 91.07 90.51	46.15 88.81 51.13 88.45 53.46 88.20 55.94 87.52	73 · 24 85 · 07 93 · 07	83 51 80 88 76 92	70.21 74.89 75.30	213.57 260.86 265.02 10.8957 mol %	90.18 95.10 95.46 69.91 wt %	480.69 578.59 586.97
0.0 12.88 19.84 30.92 30.92	149.3 148.5 147.9 146.8 146.6	60° 42.20 144.7 52.81 142.3 60.82 140.1 75.41 134.7 82.45 132.1	82.45 89.58 89.58 93.63 103.90	131.8 128.2 128.1 124.7 113.8	60.29 65.20 65.49 70.29 70.70 75.10 75.38	126.97 158.30 160.87 193.00 201.79 243.12 246.64	80.33 85.14 85.34 90.10 90.39 94.99 95.30	302.03 366.54 369.00 443.61 448.65 532.44 538.47
0.0 19.72 27.97 39.78	187.5 185.7 184.8 183.5	51.30 178.5 62.33 174.2 62.63 175.2	77.80 84.89 100.90	168.2 164.1 147.1	80.14	300.09 16.0312 mol % 139.22	78.39 wt % 79.96	264.47
0.0 8.12 11.98 17.11 17.11	233.8 233.1 232.9 231.4 231.5	70° 31.79 228.7 31.79 228.8 41.46 226.8 49.65 224.7 49.65 224.1	60.99 73.10 73.10 84.43 85.70	220.2 214.1 213.9 203.3 202.8	65.21 69.95 70.07 74.07 74.28	140.30 172.81 174.37 206.34 208.19 17.1601 mo1 %	30.27 85.10 85.26 89.98 90.14 79.94 wt \$	267.16 324.65 326.93 391.67 395.28
23.52 23.52 0.0 11.09 21.57 27.28 27.28	230.3 230.2 289.3 288.2 285.7 284.9 284.6	75° 37.58 281.5 40.71 281.2 50.69 277.2 58.34 273.7	70.86 78.20 81.43 85.15	202.5 266.1 257.7 255.3 250.8	65.16 65.41 69.95 70.20 72.52 72.76	135.86 137.00 167.58 169.58 186.86 189.49	74.91 75.25 80.00 80.19 85.14 85.16	207.47 210.68 255.94 258.92 315.57 315.16
0.0 7.30 21.19 27.17 37.43 41.45	355.4 354.4 352.0 350.8 347.0 345.8	80° 59.34 335.7 64.06 333.6 65.22 332.4 68.84 328.7 74.42 324.1 74.42 324.5	79.34 81.28 83.83 86.88 92.76 92.76	314 8 313 6 308 8 307 2 294 4 294 1	75.02 75.43 80.05 80.43 85.08	18.4232 mol % 201.80 205.32 248.24 251.58 303.40 19.3924 mol %	81.10 wt % 85.40 90.06 90.33 95.39 95.73 82.05 wt %	306 74 368 42 372 84 452 24 457 37
49.97	342.1				85.08 85.45 90.12	296.96 300.31 360.52	90.45 95.71	365.50 446.31
					79.95 80.27 84.94 85.27	20.699 mol % 232.96 236.25 283.68 287.17	83.22 wt \$ 89.96 90.42 95.00 95.37	347.32 353.59 422.36 427.17

Boswell and Cantelo, 1922 Vivien, 1926	
II N Den 109/m II d L+ d L+	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
Sinclair, 1933	
m Dp 10 ⁵ /p _o m Dp 10 ⁵ /p _o	
25° Tressler, Zimmerman and Willets, 1941	
0.2 359.2 1.0 1036.0 % b.t. % b.t.	سي فلي م _{يد} بين بين مين مدن فلد م
.6 1104.8 .2 2350.8 0.0 100.000 52.5 102.018 .8 1504.8 .3 2557.1 4.8 .071 54.2 .146 .9 1715.4 .4 2779.0 14.5 .245 55.0 .202	
31.0 .690 59.2 .701 34.4 .817 62.5 103.213 37.4 .954 65.6 103.813 42.4 101.220 68.3 104.469	
45.5 .405 69.9 104.853	
0 100.000 10.76 100.169 4.63 100.069 14.35 100.242 6.76 100.103 17.81 100.317	ا جنوا الله الله الله الله الله الله الله ال
Baroni, 1893	
% b.t % bt	
5.46 100.092 14.01 100.246 8.00 100.134 17.30 100.313 10.99 100.189	
Kahlenberg, 1901	
8 b.t. 8 b.t.	
739.0 mm	
17.18 99.52 59.84 102.42 22.79 99.64 61.52 102.70 26.55 99.77 62.61 102.92 29.92 99.92 63.65 103.06 33.06 99.97 65.16 103.47 36.45 100.13 66.42 103.78 39.68 100.35 67.44 104.02 43.77 100.63 68.95 104.42 48.18 100.99 70.32 104.82 50.84 101.28 71.27 105.14 53.14 101.42 72.15 105.33 53.47 101.54 72.72 105.63 55.58 101.79 73.41 105.93 57.93 102.12 74.32 106.32	

0smotic	pressure
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Isopiestic solutions

Robinson, Smith and Smith, 1942

_	m ₁	m ₂	m 1	m ₂	
_	,	25	0		
	0.1554 .1921 .2014 .2538 .2729 .2904 .5793 .6173 .6506 .6931 .7918 .8555 .8838 1.1028 .200	0.2792 .3414 .3581 .4459 .4768 .5057 .9661 1.0162 .0666 .131 .271 .365 .365 .331 .709 .831 2.203	1.520 1.922 2.041 .237 .238 .314 .561 .587 .777 3.074 .493 .529 .555 4.224 .446 .503	2.258 .764 .912 3.155 .148 .243 .546 .573 .806 4.159 .666 .698 .732 5.533 .803	
	.519	.259			

m1 : Potassium chloride

m₂ : Saccharose

Berkeley a	nd Ha	rtley,	1904-6
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С	osmotic P	с	osmotic l	P
	0°			
18.01 30.02 42.03	13.95 26.77 43.97	54.04 66.05 75.06	67.51 100.78 133.74	

c	t o	smotic p	с	t	osmotic p
28.5	18.8	22.7	42.0	12.6	44.3
28.5	18.6	27.8	42.0	14.2	45.9
28.5	18.3	26.9	42.0	15.7	46.6
42.0	18.2	44.0	66.0	19.0	105.7
42.0	18.3	40.2	66.0	19.4	103.2
42.0	19.5	47.3	66.0	19.5	107.0

Morse, Frazer and al., 1906							
m	t	osmotic		t	osmotic	P	
0.1 .2 .2 .3 .3 .4 .4 .5	24.05 24.23 20.90 21.47 21.75 21.65 19.90 21.62 22.15 22.60 23.70	2.51 2.55 4.72 4.78 4.81 7.24 7.20 9.64 9.69 12.06 12.22	0.6 .6 .7 .7 .8 .8 .9 .9	24.35 24.10 23.68 24.03 23.59 23.68 24.78 24.78 24.78 24.78	14.74 14.70 14.77 16.95 16.96 19.30 19.39 21.82 21.91 24.42 24.05		
Morse	e, Fraze	er, and H	olland,	1907			
Di	t	osmotic	P m	t	osmotic	P	
0.1 .2 .3 .4 .5	0.24 .26 .22 .24 .21	2.40 4.76 7.03 9.28 11.61	0.6 .7 .8 .9	0.22 .21 .22 .27 .25	13.99 16.51 18.99 21.60 24.00		
Morse	, Fraze	r and Dur	nbar, 19	07			
m	t	osmotic	P m	t	osmotic	P	
0.1 .2 .3 .4 .5	4.89 5.32 4.50 4.50 4.79	24.10 23.83 23.67 23.73 23.80	0.6 .7 .8 .9 1.0	5.54 4.45 4.41 4.78 4.46	24.20 24.18 24.33 24.81 24.75		
Vegard	1908						
c	t	osmotic	P c	 t	osmotic	P	
	ب سر الدول في الدولية في ليد في بدوال الدول في الدول في الدول الدول في الدول ا						
4.0 15.99 26.89 31.99 32.00 33.75	0.0 0.0 9.25 0.0 0.0 4.4	2.88 12.15 23.17 28.80 28.85 31.57	39.62 52.00 16.17 31.99 32.00	7.0 11.5 10.3 11.3 11.8	39.85 63.80 12.48 28.67 29.29	ن فيو منو طام طام الد	
H.N.Morse and H.V.Morse, 1908							

t osmotic P M

2.44 4.82 7.19 9.57 12.00

10 10 10,1 10,1 10,1 ___t

osmotic P

14.54 17.09 19.73 22.22 24.97

Morse and Mears, 1908 Morse, Holland and al., 1912 Weight normal concentration O.1N 0.2N 0.8N 0.8N 0.4N 0.5N		
m t ossotic P m t ossotic P 0.1 15.00 2.48 0.6 15.00 14.86 1.2 14.95 4.91 7 15.00 17.38 1.3 15.05 7.33 .8 15.00 22.91 1.4 15.00 9.78 9 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.5 15.00 12.29 1.0 15.00 22.91 1.0 15.00 25.40 T weight - normal concentration 0.6 N 0.7N 0.8N 0.9N 1.0N Morse, Holland and al., 1911 t weight - normal concentration 0.1N 0.2N 0.3N 0.4N 0.5N Osmotic P 0.2462 4.722 7.085 9.442 11.896 1.0 26.33 1.0 26.120 Morse, Holland and al., 1911 t weight - normal concentration 0.1N 0.2N 0.3N 0.4N 0.5N Berkeley and Hartley, 1916 \$ osmotic P 1.0 2.462 4.722 7.085 9.442 11.896 1.0 2.462 8.80 3.334 7.790 12.297 2.5 14.685 19.246 6.85 19.47 22.128 24.206 2.5 15.5 1.946 6.86 19.47 22.128 24.825 2.5 15.6 17.266 6.9 23.306 22.99 12.780 2.5 14.685 17.503 20.16 22.884 25.893 10 14.885 17.503 20.16 22.884 25.893 10 14.885 17.503 20.16 22.884 25.893 10 14.885 17.503 20.16 22.884 25.693 15 15.18 11.28 20.985 33.717 26.388 20 15.888 18.128 20.985 33.717 26.388 20 15.888 20.188 33.35 33.888 20 15.888 20.8888 33.348 20.8888 33.348 20.8		Morse, Holland and al., 1912
0.1 15.00 2.48 0.6 15.00 14.86		
3 15, 08 7,38 8 15, 00 20,07		0.1N 0.2N 0.3N 0.4N 0.5N
Morse and Holland, 1909	0.1 15.00 2.48 0.6 15.00 14.86 .2 14.95 4.91 .7 15.00 17.38 .3 15.05 7.33 .8 15.00 20.07 .4 15.00 9.78 .9 15.00 22.91 .5 15.00 12.29 1.0 15.00 25.40	30 2.474 5.044 7.647 10.295 12.978 40 .560 .163 .844 10.599 13.355 50 .635 .278 .974 10.724 13.504 60 .717 .437 8.140 10.866 13.666
Morse and Holland, 1909		t weight - normal concentration
M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P M OSBOTIC P STORY STOR		
M	پر کے اس کے ان ان ان ان ان ان ان ان ان ان ان ان ان	30 15.713 18.499 21.375 24.226 27.223
0.1		11 40 16.146 18.932 21.803 24.735 27.701
Morse, Holland and al., 1911 The weight - normal concentration		60 16,535 19,404 22,327 25,266 28,367 70 16,820 19,568 22,567 25,562 28,624 80 - 23,062 25,919 28,000
Morse, Holland and al., 1911 The weight - normal concentration	.4 10.12 .4 9.960 .5 12.73 .5 12.490 .6 15.42 .6 15.200 .7 18.02 .7 17.840 .8 20.73 .8 20.600 .9 23.66 .9 23.310	
Morse, Holland and al., 1911	1.0 26.33 1.0 26.120	
O.1 N O.2 N O.3 N O.4 N O.5 N		25.351 27.22 62.932 175.05 40.448 57.43 67.079 217.80
Berkeley and Hartley, 1916	_	
0 2.462 4.722 7.085 9.442 11.895 5 .452 .818 .198 .608 12.100 10 .498 .893 .334 .790 12.297 3.28 2.23 25.34 24.55 15 .541 .985 .476 .949 12.549 20 .590 5.064 .605 10.137 12.748 25 .634 5.148 .729 10.296 12.943 t weight - normal concentration 0.6 N 0.7 N 0.8 N 0.9 N 1.0 N 0 14.381 16.886 19.47€ 22.118 24.825 5 14.605 17.206 19.822 22.478 25.283 10 14.885 17.503 20.161 22.884 25.693 15 15.144 17.815 20.535 23.305 26.189 20 15.388 18.128 20.905 23.717 26.638 25 15.624 18.434 21.254 24.126 27.053 88.0 90.4 100.0 98.7 99.0 92.0 127.0 132.4 98.0 90.4 100.0 98.7 99.0 92.0 127.0 132.4 124.2 127.4 128.4 133.5 126.0 129.5 155.6 170.6 154.9 169.5 159.0 178.7 153.3 164.1 187.7 222.0 175.8 198.2 181.0 213.8 173.7 200.2 211,2 259.3	و نے کیلی میں کیا گیا ہے جو اس میں سے کے اس میں میں میں جو میں اور الحالات کے کہتم کی کے کہا کہ الدائد الدائد الدائد میں میں اس الدائد	Berkeley and Hartley, 1916
0.6 N 0.7 N 0.8 N 0.9 N 1.0 N Lotz and Frazer, 1921	0 2462 4 722 7 085 0 442 11 805	% osmotic P % osmotic P 3.28 2.23 25.34 24.55 9.24 6.85 44.83 67.74 17.03 14.21 52.76 100.13
0.6 N 0.7 N 0.8 N 0.9 N 1.0 N Lotz and Frazer, 1921	t weight - normal concentration	
0 14.381 16.886 19.47¢ 22.118 24.825 5 14.605 17.206 19.822 22.478 25.283 10 14.855 17.503 20.161 22.884 25.693 15 15.144 17.815 20.535 23.305 26.189 20 15.388 18.128 20.905 23.717 26.638 25 15.624 18.434 21.254 24.126 27.053	0.6 N 0.7 N 0.8 N 0.9 N 1.0 N	Lotz and Frazer, 1921
10 14.855 17.503 20.161 22.884 25.693 15 15.144 17.815 20.535 23.305 26.189 20 15.388 18.128 20.905 23.717 26.638 25 15.624 18.434 21.254 24.126 27.053 95.8 87.2 99.6 97.4 98.0 90.4 100.0 98.7 99.0 92.0 127.0 132.4 124.2 127.4 128.4 133.5 126.0 129.5 155.6 170.6 154.9 169.5 159.0 178.7 153.3 164.1 187.7 222.0 175.8 198.2 181.0 213.8 173.7 200.2 211.2 259.3	0 14.381 16.886 19.476 22.118 24.825	C osmotic P C osmotic P
20 15.388 18.128 20.905 23.717 26.638 68.0 57.5 68.5 63.1 95.8 87.2 99.6 97.4 98.0 90.4 100.0 98.7 99.0 92.0 127.0 132.4 124.2 127.4 128.4 133.5 126.0 129.5 155.6 170.6 154.9 169.5 155.0 178.7 153.3 164.1 187.7 222.0 173.7 200.2 211.2 259.3	10 14.855 17.503 20.161 22.884 25.693	30° 55.7°
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20 15.388 18.128 20.905 23.717 26.638	68.0 57.5 68.5 63.1 95.8 87.2 99.6 97.4 98.0 90.4 100.0 98.7 99.0 92.0 127.0 132.4 124.2 127.4 128.4 133.5
		126.0 129.5 155.6 170.6 154.9 169.5 159.0 178.7 153.3 164.1 187.7 222.0 175.8 198.2 181.0 213.8 173.7 200.2 211.2 259.3

Freezing	g curve . (Cryoscopy)	Abegg,	1894			
Cuahasia	197/			m	f.t.	m	f.t.	
Guthrie %		 %	f.t.	0.33 0.55	9 -0.670 1 -1.113	0.984 1.283	-2.057 -2.740	
5			-3.2	=======	ن جموعتها جان جي انسان جي انها سن جي من انها ن جي انها جي دران جي انها جي سن جي انها جي سن	ب. د.	ر الله الله فيه الله على الله الله الله الله الله على الله على الله الله الله الله الله الله الله ال	
10 15	-0.5 -0.9	35 40 45 50 51.4 67.33	-4.1 -5.4 -7.0					
20 25 30	-0.9 -1.3 -1.8 -2.4	51.4 67.33	-7.0 -8.5 E 0.0		t, 1897-99		ن من موجع ضرحن شدهم استان الدائد الدائد الدائد الدائد	
			ن و بند من سن من دند دن سندهم دن سن سن شن ان ان ان دند دند دند سندهم است.	% %	f.t.	*	f.t.	
				0.97 2.18 4.10	-0.0532 -0.1230 -0.2372	7.88 14.74 25.69	-0.4806 -0.9892 -2.0897	
Picker	ing, 1891					ے ۔ ۔ ۔ بر پیولو کی اندرائی اندرائی بر پی می میں اندرائی اندرائی		
Z	f.t.	8	f.t.					
0.0529 .1064	-0.0036 .0059	10.8310 11.7900	-0.7181 .7913	Ewan,	1899		ريها فيون المواجعة المواجعة المواجعة المواجعة المواجعة المواجعة	
.1490 .1969 .2459	.0082 .0107 .0134	12.6690 13.6700 13.6730	.8611 .9500 .9446	×%		f.t.		
.2921 .3380	.0172	14.6520 15.7150 16.5270	1.0261 .1183	22,97 30,14 34,71		-1.768 2.6824 3.420		
.3940 .4843 .5838	.0225 .0288 .0339 .0397	16.5270 16.5300 17.5390	.1931 .2300 2895	35.98 41.92		3.630 -4.885		
.6803 .7744	. ()445	18.4200 18.4240 20.41	. 2895 . 3700 . 3724	=======	شعب شعب سيديا النبية أمين مصحد اللهن اللهم مطب النهو لهيده الا محمد النبية مشعر النبي كنات الله والنبية الكلم المدينة الله	سر شبید اجهار حقی کاری احمار احمار احماد احماد احماد احماد احماد احماد احماد احماد احماد احماد احماد احماد احما	المن الله على المن الله على الله الله الله الله على الله الله الله الله الله الله الله ال	معرب من معربين المواهو الدور معربية الدور المواهو الدور الدور
.8704 .9705 1.1499	.0510 .0571 .0669	20.41 22.19 24.37 26.00	.58 .77 2.02					
.3857 .5464	.0808 .0908 .1033 .1156	26.00 27.46	$\begin{array}{c} \cdot 13 \\ \cdot 33 \end{array}$	Jones,	1904; Jones	and Getma	ın, 1904	
.7473 .9355 2.4159	.1033 .1156 .143 2	26.00 27.46 30.42 31.33 33.35 35.37 37.29 39.23	.71 .82 3.13	M	f.t.	M	f.t.	
2,9060 3,4700	.1723	35.37 37.29	.47 .81	0.2	-0.904 -0.848	.4	-4.612	:
3.4737 3.8724 4.3542	.2079 .2328	39,23 41,09 43,15	4.22 4.60 5.07	.4 .6 .8 1.0	-1.345 -1.950 -2.662	.6 .8 2.0	-5.800 -7.230 -9.130	
4.8578 5.3350	.2079 .2328 .2645 .2956 .3255	45.16 47.00	5.65 6.11				, , , , , , , , , , , , , , , , , , ,	ا موالی خواس سیامیرانی نشرانی موالوات که میرانیازانی الرانیا
5.8171 6.4050 6.4100	.3588 .3997 .4000	48.97 50.65 52.67	6.76 7.38 8.06					
6.9020 7.3840	.4326 .4669	52.67 54.75 56.82 58.86	9.02 9.93 10.90	Young	and Sloan,		والبيانات القوالي الك الغز فيلة القوالي لك السرائب الكا	المحاصرة حرشة المرابي للداحر
7.8070 8.3230 8.8030	.4956 .5322 .5679	60,60	10.90 11.69 12.72	× × × × × × × × × × × × × × × × × × ×	f.t.		f.t.	
9.7765 9.7800	.6384 -0.6500	64.49	-13.80	2.22 2.28 6.78	-0.122 .126	16.85 16.94 20.59	-1.124 .132	
	ن من من شو شو شهاشک شهرانید استانک سال در در در در در در در در در در در در در	ر میں جدر اندر میں جدر میں میں اس اس میں اس	ي التي التي التي التي التي التي التي الت	6.78 6.80 12.30	.395 .395 .766	20.59 20.68 23.73	.463 .469 .775	
Diako	ng, 1893			12.33	.766 -0.771	23.83	-1.780	
#ICKET1	ng, 1893	 f.t.	المستخد فيد فيروسيون والموافق والمرافق والما المرافق والما المرافق والما المرافق والما		پیشان اسک همپرشان «کنوانی «اندو کنی بین اسک دید. ر های همی همی همی شدن بینیدهای کنی شده همی امی	ندر الدورات المهادية الدوالي بدو الدوالي في الدوالي الدوالي الدوالي الدوالية الدوالي	ر میرانده کنیدامی امام اداره هید اموراندی هند کنی نکورندی از ر مین دهیدامی هید امام اداری خوباهی امام بیشنده به میداهی	
12,12	نين کين اختراجي ميا انهار انهار مند اخد اختر اخت		والموافقة المداوية والمداوية المداوية المداوية والمداوية المداوية المداوية المداوية والمداوية والمداوية والمداوية					
17.76		-0.8167 -1.3072		}				
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Morse, Frazer and al., 1906	Solubility
m f.t. m f.t.	
0.1 -0.195 0.6 -1.190 .2 .393 .7 .390 .3 .584 .8 .621 .4 .784 .9 .829 .5 -0.983 1.0 -2.066	Courtonne, 1877
.2 .393 .7 .390 .3 .584 .8 .621 .4 .784 .9 .829 .5 -0.983 1.0 -2.066	\$ f.t.
.5 -0.983 1.0 -2.066	66.5 12.5 71 45
Maass and Hatcher, 1922	
\$ f.t. \$ f.t.	Mondain-Monval, 1925
نے نے سے نے نے نے نے نے نے نے میں اس میں امرین سے اور سے اور سے اور سے اس سے اور سے اور سے اور اور اور اور اور اور اور اور اور اور اور اور اور اور اور	% f.t. % f.t.
3.88 -1.97 30.94 -5.70 11.64 2.60 36.82 7.57 18.66 3.47 42.86 10.30 25.16 -4.72 50.00 -14.32	64.27 0.9 37.50 -4.03 66.10 15.8 56.52 -10.42 67.74 25.6 60.00 -12.46 68.50 30.5 61.90 -13.68 66.67 -17.08 metast.
Kremann and Eitel, 1923 # f.t.	Grube and Nussbaum, 1928
0.00 0.0	% f.t. % f.t.
9.234 - 0.61 to - 0.58 19.472 - 1.51 to - 1.57 25.98 - 2.35 to - 2.31 31.75 - 3.03.to - 3.15 37.88 - 4.245 43.77 - 5.75 to - 5.70 44.73 - 6.64 to - 6.68 48.52 - 7.39 to - 7.46 50.00 - 7.78 to - 7.84 51.88 - 8.58 to - 8.34 54.88 - 10.34 to - 10.27	64.21 0 80.61 90 67.99 25 81.76 95 69.52 35 82.47 98 72.24 50 82.96 100 77.25 75
50.00 - 7.78 to - 7.84 51.88 - 8.58 to - 8.34 54.88 -10.34 to -10.27 58.37 -12.21 to -11.95	Ahrens, 1930
62.58 -14.43 to -14.51	% f.t. % f.t.
Babinsky, 1924	64,05 0 74,16 60 67,12 20 78,11 80 70,30 40 82,81 100
8 f.t. 8 f.t.	
21.5 -1.60 50.0 -7.31 26.1 2.12 54.7 9.14 35.0 3.42 55.0 9.32	Benrath, 1942
11 39.0 4.28 59.5 11.66	\$ f.t. % f.t.
41.98 4.91 60.0 11.98 48.5 -6.76 62.0 -13.50	84 107 92 136 86 115 94 144 88 122 100 160 90 130

		<u> </u>	1				
f.t. \$ f.t. \$ f.t. \$ f.t. 0 64.18 40 70.42 66.09 18.5 73.74 57.8 5 64.87 45 71.32 66.97 23.9 73.68 58.4 115 66.33 60 74.18 67.23 24.9 74.15 59.7 20 67.09 70 76.22 67.23 24.9 74.18 59.7 25 67.89 80 78.36 68.31 30.0 74.47 61.4 335 69.55 100 82.97 48.81 33.1 74.59 52.6 35 69.55 100 82.97 48.82 33.1 74.59 62.6 4 70.02 44.47 41.4 44.4 44.7 41.4 4 8.62 33.1 75.95 64.5 49.32 33.1 75.95 64.5 49.32 34.1 75.95 64.5 49.32 34.1 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
0 64.18 40 70.42 66.09 18.5 73.74 57.8 5 64.87 45 71.32 66.97 23.9 73.68 58.4 10 65.58 50 72.25 66.97 23.9 73.68 58.4 110 65.58 50 72.25 66.93 24.9 74.18 59.7 200 67.98 87.0 76.22 67.33 24.9 74.18 59.7 210 67.98 87.8 220 67.98 88.61 68.36 30.0 74.47 41.15 59.7 35 68.59 90 80.61 68.31 30.0 74.47 41.1 25 68.68 90 80.61 68.31 30.0 74.47 41.1 25 68.58 100 82.97 35 69.55 100 82.97 36 82.33 1.5 74.93 62.9 48 62 33.1 75.05 64.9 49 9.32 34.5 75.43 65.5 49 9.32 34.5 75.43 65.5 49 9.32 34.5 75.43 65.5 49 9.41 36.4 75.95 64.5 49 9.41 36.4 75.95 66.5 49 9.41 36.4 75.95 66.5 49 9.41 36.4 75.95 66.5 40 9.74 36.0 75.80 66.4 40 9.0 8.50 66.4 40 9.0 8.50 66.4 40 9.0 8.50 66.4 40 9.0 8.5	Herzfeld, 1941			Wise and	Nicholsen, 1955	5	
5	f.t. %	f.t. %		%	f.t.	%	f.t.
(5+2) (7+2) 58.05 -10.5 E 56.20 -9.55 E 58.30 -10.0 63.15 0.0 63.25 0.0 70.65 +10.0 68.50 +10.0 78.25 20.0 73.85 20.0 84.44 27.8 79.45 30.0 85.20 40.0 88.37 45.7 (x+1) (y+1) 55.10 -9.05 E 54.00 -8.55 E 58.55 -5.0 56.95 -5.0 62.95 0.0 62.75 0.0 67.50 +5.0 69.30 +5.0 72.20 10.0 73.4 2315 I + II + sol. 33.9 2600 33.2 2660 + ice III + sol. 33.2 2775	0 64.18 5 64.87 10 65.58 15 66.33 20 67.09 25 67.89 30 68.70 35 69.55	40 70.42 45 71.32 50 72.25 60 74.18 70 76.22 80 78.36 90 80.61 100 82.97		66.97	23.9	73.68 74.10 74.15 74.48 74.47	58.4 58.6 59.7 61.1 61.4 62.6 62.9 64.6
(5+2) (7+2) 58.05 -10.5 E 56.20 -9.55 E 58.30 -10.0 63.15 0.0 63.25 0.0 70.65 +10.0 68.50 +10.0 78.25 20.0 73.85 20.0 84.44 27.8 79.45 30.0 85.20 40.0 88.37 45.7 (x+1) (y+1) 55.10 -9.05 E 54.00 -8.55 E 58.55 -5.0 56.95 -5.0 62.95 0.0 62.75 0.0 67.50 +5.0 69.30 +5.0 72.20 10.0 73.4 2315 I + II + sol. 33.9 2600 33.2 2660 + ice III + sol. 33.2 2775				59.42 69.41 70.17 70.23 70.35 70.55	35.0 36.4 40.2 40.7 41.0 42.2 42.3	75.80 75.95 76.07 76.13 76.32 76.45 77.06	66.5 68.2 69.0 70.1 70.4
(5+2) (7+2) 58.05 -10.5 E 56.20 -9.55 E 58.30 -10.0 63.15 0.0 63.25 0.0 70.65 +10.0 68.50 +10.0 78.25 20.0 73.85 20.0 84.44 27.8 79.45 30.0 85.20 40.0 88.37 45.7 (x+1) (y+1) 55.10 -9.05 E 54.00 -8.55 E 58.55 -5.0 56.95 -5.0 62.95 0.0 62.75 0.0 67.50 +5.0 69.30 +5.0 72.20 10.0 73.4 2315 I + II + sol. 33.9 2600 33.2 2660 + ice III + sol. 33.2 2775	% f.t.	% f.t.		71.63	46.1	76.98u	73.8
(5+2) (7+2) 58.05 -10.5 E 56.20 -9.55 E 58.30 -10.0 63.15 0.0 63.25 0.0 70.65 +10.0 68.50 +10.0 78.25 20.0 73.85 20.0 84.44 27.8 79.45 30.0 85.20 40.0 88.37 45.7 (x+1) (y+1) 55.10 -9.05 E 54.00 -8.55 E 58.55 -5.0 56.95 -5.0 62.95 0.0 62.75 0.0 67.50 +5.0 69.30 +5.0 72.20 10.0 73.4 2315 I + II + sol. 33.9 2600 33.2 2660 + ice III + sol. 33.2 2775	0.0 0.0 6. 10.0 -0.6 6. 20.0 -1.5 6. 30.0 -2.65 6. 40.0 -4.4 50.0 -7.05 60.0 -11.6 70.0 -19.05	· · · · · · · · · · · · · · · · · · ·		72.12 71.91 72.51 72.72 72.76 73.04 73.05 72.78 73.16 73.50 73.62 73.64	49.6 50.2 51.1 52.2 53.6 53.8 54.1 55.8 56.1 56.1	77. 50 77. 52 77. 58 78. 40 78. 85 79. 85 79. 94 79. 99 80. 22 80. 32 80. 87	74.6 75.1 79.5 82.3 85.1 85.3 85.6 88.6
58.30 -10.0 63.15 0.0 C 63.25 0.0 70.65 +10.0 C 68.50 +10.0 78.25 20.0 C 73.85 20.0 84.44 27.8 C 79.45 30.0 S 85.20 40.0 S 88.37 45.7 C (x+1) (y+1) 55.10 -9.05 E 54.00 -8.55 E +18.5 " 680 E + ice I + sol. C 52.95 0.0 62.75 0.0 C 67.50 +5.0 69.30 +5.0 36.4 2315 I + II + sol. C 72.20 10.0 S	(5+2)	(7+2)					
55.10 -9.05 E 54.00 -8.55 E +18.5 " 680 E + ice I + sol, 58.55 -5.0 56.95 -5.0 62.95 0.0 62.75 0.0 67.50 +5.0 69.30 +5.0 72.20 10.0 -8.5 51.24% 1 E +18.5 " 680 E + ice I + sol, 35.2 " 2002 E 37.5 2200 36.4 2315 I + II + sol, 33.9 2600 33.2 2660 + ice III + sol, 32.4 2775	58.30 -10.0 66 63.25 0.0 76 68.50 +10.0 78 73.85 20.0 84 79.45 30.0 85.20 40.0 88.37 45.7	3.15 0.0 0.65 +10.0 8.25 20.0 4.44 27.8					
u l	55.10 -9.05 E 54 58.55 -5.0 56 62.95 0.0 62 67.50 +5.0 69	4.00 -8.55 I 6.95 -5.0 2.75 0.0		35,2 37,5 36,4 33,9 33,2 32,4	" 2002 E 2200 2315 2600 2660 2775	I + II + so + ice III +	l. sol.

	t d t d
Down and a feet and a feet a f	t d t d 200aq.=8.72% 400aq.=4.45%
Properties of phases.	!
D	
Density	# 11.88 .03429 9.97 01762
	19.22 .03283 16.33 .01666 25.33 .03120 21.72 .01551 30.32 .02964 25.56 .01453
Niemann, 1832	25,33 .03120 21,72 .01551 30,32 .02964 25,56 .01453 36,86 .02729 29,95 .01331
% d % d	
17.5°	
0 0 0087 36 1 1567	
1 1,0022 37 .1616	Gerlach, 1859
3 .0093 39 .1716	8 d 8 d
5 .0166 41 .1817	17.5°
6 .0202 42 .1867 7 .0241 43 .1919	0 0.998 7 13
8 0278 44 1973 9 0315 45 2027	2 _006491 39 _172711
10 .0354 46 .2082 11 .0397 47 .2137	
H 12 0443 48 2193	4 .014384 41 .183006 5 .018379 42 .188208 6 .022493 43 .193448 7 .026443 44 .198725
13 .0490 49 .2249 14 .0538 50 .2306 15 .0586 51 .2362	7 .026443 44 .198725 8 .030520 45 .204039
13 .0490 49 .2249 14 .0538 50 .2306 15 .0586 51 .2362 16 .0633 52 .2418 17 .0679 53 .2474	9 .034628 46 .209388 10 .037766 47 .214774
16 .0633 52 .2418 17 .0679 53 .2474 18 .0724 54 .2530	11 .042934 48 .220200
19 .0770 55 .2586	12 .047133 49 .225662 13 .051363 50 .231162
20 .0816 56 .2622 21 .0861 57 .2698 22 .0906 58 .2753	14 .055622 51 .236700 15 .059912 52 .242277
20 .0816 56 .2622 21 .0861 57 .2698 22 .0906 58 .2753 23 .0951 59 .2809 24 .0996 60 .2865 25 .1042 61 .2921 26 .1089 62 .2977 27 .1136 63 .3033 28 .1183 64 .3088 29 .1231 65 .3143 30 .1278 66 .3198 31 .1325 67 .3253	16 .064234 53 .247992 17 .068588 54 .253546
23 .0951 59 .2809 24 .0996 60 .2865 25 .1042 61 .2921 26 .1089 62 .2977	17 .068588 54 .253546 18 .072974 55 .259238
26 .1089 62 .2977 27 .1136 63 .3033	19 .077491 56 .264970 20 .081840 57 .270742
28 .1183 64 .3088 29 .1231 65 .3143	21 .086321 58 .276553 22 .090834 59 .282502
29 ,1231 65 ,3143 30 ,1278 66 ,3198 31 ,1325 67 ,3253	23 .095380 60 .288292
30 .1278 66 .3198 31 .1325 67 .3253 32 .1377 68 .3307 33 .1421 69 .3360	1 25 .104571 62 .300194
32 .1377 68 .3307 33 .1421 69 .3360 34 .1469 70 .3413	27 -113895 64 -312255
34 .1469 70 .3413 35 .1548	28 .119906 65 .318347 29 .123352 66 .324482
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	30 .128132 67 .330656
	32 .137794 69 .343129
	33 .142677 70 .349432 34 .147594 71 .355771 35 .152547 72 .362155
Marignac, 1871	H 35 . 152547 72 . 362155
t d	36 .157034 73 .368582 37 .162058 74 .375050 75 .381562
	1
25aq.=43.30% 50aq.=17.51% 100aq15.9	94%
5.60 .19777 11863 1.00090	
9.97 .19624 .11751 .06567 16.33 .19388 .11649 .06428	
29.95 .18812 .11124 .06014	
35.42 .18558 .10850 .05809	

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Chancel, 1	872			Stro	hmer, 1884	.			
%	đ	%	đ	# #	d	%	d	%	d
1	0	0			نے کیا۔ کی ایک انگرانیا انکار جدا میں میں		17.5°		
0 1 2 3 4 5 6 7 8 9 10 11 12	1 1.0039 .0079 .0120 .0161 .0202 .0243 .0285 .0327 .0369 .0412 .0455 .0498	13 14 15 16 17 18 19 20 21 22 23 24 25	1.0541 .0585 .0629 .0673 .0717 .0762 .0807 .0853 .0899 .0945 .0991 .1038 .1085	1 2 3 4 5 6 7 8 9 10 11 12 13	1.0027 .0067 .0107 .0147 .0187 .0227 .0268 .0309 .0350 .0391 .0433 .0474 .0516	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1.0730 .0774 .0818 .0863 .0908 .0953 .0999 .1045 .1092 .1139 .1186 .1233 .1280	35 36 37 38 39 40 41 42 43 445 46 47 48	1. 1525 . 1575 . 1626 . 1677 . 1728 . 1779 . 1831 . 1883 . 1936 . 1988 . 2041 . 2095 . 2149 . 2203 . 2258
Barbet, 18	78			15 16 17	.0600 .0643 .0686	33 34	.1376 .1425 .1475	49 50	2313
75	đ	%	đ						
		50		Kano	nnikoff, l	885			
0 1.00	0.99913 1.0038 2	39.17 39.89	1.17436 17803			t	d		
1.98 2.97	$00765 \\ 01148$	40.61 41.33	.18169 .18534						
3.94 4.90	. 01531	42.05 42.76	.18898 .19261	6.4 8.7	2	23.2 20.4	1.02286 .03122		
5.86 6.82	.01913 .02296 .02679	43.47 44.17	.19261 .19624 .19987	11.4 15.0	8	20.0	.04266 .05812		
7.76 8.69	. 03061 . 03444	44.87 45.56	. 20350 . 20713						
9.63 10.55	.03826	46.25 46.91	. 21075						
∥ 11.47	.04591	47.62	. 21437 . 21798	Tran	be, 1885				
12.40 13.30 14.19	.04974 .05356	48.30 48.97	. 22159 . 22520				····		
15.09	.05739 .06121	49.63 50.39	. 22881 . 23242	%	·	d	<u> </u>		d
15.98 16.87 17.73 18.58	. 06503 . 06884 . 07265 . 07646	50.96 51.62 52.28 52.93	. 23603 . 23964 . 24325 . 24686	0 4.	76 I	0.9991 0194	9.09 16.67	j	l.0392 l.0778
19.44 20.30 21.15	. 08028 . 08409 . 08790	53.58 54.23 54.87	. 25047 . 25408 . 25768						
21.99 22.82	.09171 .09552	$\frac{55.50}{56.13}$. 261 29 . 26490	Hamm	erschmidt,	1889			
23.64 24.46	.09932 $.10312$	56.76 57.39	. 26851 . 27211	8			d d		
25.28 26.10	.10691 $.11072$	58.01 58.63	. 27572 . 27933			20°			
26.92 27.73 28.52 29.31	.11451 .11830 .12208 .12586	59.24 59.85 60.45 61.05	. 28294 . 28654 . 29015 . 29376	0 22	.68		.99823 .09296		
30.10 30.88	.12964	61.66	. 29736				سم میں خبر حمر حمرات میں غیر غیر میں دما شع میں میں مدر حمراتی میں جن حمد عید میں میں جدو اللہ		
31.66 32.43 33.20	.13718 .14094 .14470	62.26 62.86 63.45 63.04	.30097 .30458 .30820 .31182	Bod1:	" ander, 189	1			
33.95 34.72	.14845 .15218 .15590	64.62 65.20	31544 31907	С			d		
35.48 36.23	.15590 .15961	65.78 66.36	32270 32633			140			
36.97 37.71 38.44	.15961 .16331 .16700 .17068	66.92 67.48	. 32997 . 33361	87	.5		1,3246		
				:		. ه. ه. ه. ه. ه. ه. ه. ه. د هر مدرسه ای اس ای س			

Nasini and Villa	vecchia, 1892			Plat	o, 1900	_			
% c	d %	С	d	%			đ		
	20°				0°	10°	15°	20°	25°
8.7899 9.0788 10.5906 11.0189 10.6479 11.0805 10.8704 11.3236 11.7761 12.3087 11.9272 12.4752 12.4323 13.0306 12.8951 13.5432 13.1471 13.8058 13.2906 13.9800 13.5836 14.3042 14.8377 15.6987 16.2211 17.2636 16.7790 17.8971 17.5433 18.7687 17.7041 18.9576	.00982 21.7080 .01790 24.5326 .02049 24.7285 .02045 25.4953 .02045 25.8970 .02364 25.3826 .02463 26.2443 .02510 26.3220 .02777 27.0406 .03280 27.8493 .04044 31.4207 .04062 31.5643 .04523 44.2459 .04170 42.4463 .04523 44.2459 .04812 44.6549 .05106 45.5892 .05106 46.2449 .05106 46.2449 .05106 47.2153 .05803 47.2153 .05427 47.9860 .06663 48.2548	31.0926 35.6143 35.6143 350.4411 52.9818 53.5961 55.8684 55.8684 57.2884 57.3250 58.4508 59.1152 59.2116	1. 08864 .10125 .10066 .10560 .10560 .10902 .10950 .11276 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11495 .11496 .109746 .20022 .20810 .20810 .20861 .21494 .21412 .20808 .21992 .22040 .22130 .22343 .22386 .22469 .22343 .22386 .22469 .22440 .22469 .22440 .22469 .22869 .22843 .3014 .24407 .26114 .27290 .28697 .29006 .30108 .30942	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 33 33 34 35 36 37 38 38 39 40 40 40 40 40 40 40 40 40 40 40 40 40	0.99987 1.00390 .00798 0.1207 .01619 .02033 .02449 .02867 .03287 .03710 .04135 .04564 .05429 .05865 .06304 .06746 .07191 .07640 .08092 .08546 .09005 .09466 .09905 .10398 .10398 .11820 .12302 .12302 .12302 .12362 .12787 .13274 .13766 .14761 .15262 .14761 .15262 .14761 .15262 .15769 .16278 .16791 .17307 .17826 .18349 .18849	0.99973 1.00365 .00760 .01157 .01557 .01960 .02366 .02774 .03185 .03899 .04016 .04437 .04859 .05286 .05714 .06581 .07020 .07461 .07906 .08363 .08805 .09260 .09717 .10178 .10642 .11110 .11581 .12056 .12534 .13014 .13499 .13988 .14480 .14975 .15976 .16481 .16990 .17504 .18020		0.99823 1.00212 .00602 .00993 .01388 .02186 .02588 .02994 .03814 .04229 .04646 .055066 .05917 .06346 .06779 .07215 .07654 .08990 .09841 .08990 .09442 .09897 .10356 .11283 .11751 .11751 .117636 .14145 .14634 .15127 .15624 .16627 .17134	0.99707 1.00093 .004812 .00266 .01266 .01266 .02060 .02461 .03271 .03679 .04925 .05346 .05772 .06198 .06629 .07062 .07499 .07940 .08382 .08830 .09279 .09731 .10188 .10647 .11110 .11575 .12944 .12517 .12944 .12517 .12993 .13474 .13956 .14433 .15427 .15425 .16931 .17439
Kanonnikoff, 1894				42 43 44	. 19406 . 19939 . 20477	.19063 .19590 .20121	.18875 .19400 .19927 .20460	.18159 .18677 .19199 .19725 .20254	.17952 .18468 .18988 .19512
% d	% d			45 46	.21018 .21562 .22109	.20657 .21194		. 20254 . 20787 . 21324	. 20039 . 20570
20	ر میں میں میں میں میں میں میں میں میں میں		,	47 48	.22109 .22661 .23216	.21736 .22281	. 21534	.21324 .21864	.21105 .21644
0 0.99823 10.01 1.03900 14.97 .06300 20.85 .08601 25.95 .10818 30.64 .13028	34.60 1.1498 36.80 1.6079 40.72 1.7999 44.91 2018 49.71 22900 50.51 24099	5		49 50 51 523 554 556 57 58 560 61 62	. 23216 . 23775 . 24337 . 24903 . 25471 . 26621 . 277202 . 27785 . 28373 . 28964 . 29560 . 30158 . 30761	. 21736 . 22281 . 22830 . 23382 . 23939 . 24500 . 25065 . 25632 . 26203 . 26779 . 27358 . 27940 . 28527 . 29117	. 20994 . 215 34 . 22076 . 22623 . 23173 . 23727 . 24285 . 24847 . 25981 . 26554 . 27711 . 28296 . 28884 . 29476	. 21864 . 22409 . 22957 . 23509 . 24064 . 24623 . 25753 . 26324 . 26899 . 27477 . 28059 . 28646 . 29234	. 22185 . 22732 . 23280 . 23835 . 24391 . 24953 . 25516 . 26086 . 26657 . 27234 . 27814 . 28399 . 28986
0 2.52 5.31 10.44	0.99823 1.00830 .01880			62 63 64 65 66	.30761 .31367 .31978 .32591 .33210	.30308 .30911 .31516 .32125 .32738 .33356	.30071 .30672 .31275	.29829 .30427 .31028 .31633	.29579 .30175 .30774 .31376 .31984 .32595
21.97	.03933 .08767			67 68 69 70	.33831 .34456 .35086 .35719	.33356 .33977 .34601 .35230	.32493 .33109 .33727 .34450 .34976	.32243 .32855 .33472 .34093 .34717	.31984 .32595 .33210 .33828 .34452

ŀ	30°	40°	50°	60°	
0	0.99567	0.99232	0.98813	0.98330	Mikhailenko, 1901
	.99952	.99615	.99192	.98705	g d
1 2 3	$1.00340 \\ .00731$	1.00001 .00387	.99575 .99958	.99083 .99463	
4 5	.01124	.00777	1.00345	.99846 1.00231	17.5°
I 6	.01518 .01916	.01563	.00735 .01127	.00619	6.40 1.02403 21.48 .08854
7 8	.01916 .02316 .02717 .03122 .03530	.01563 .01960 .02359 .02761	.01521	.01010	31.64 .13612
9	.03122	.02369	.01918	.01402 .01799	38.10 .16820 45.08 .20462
10	.03530	.03165	. 02720	.02198	45.08 .20462 50.64 .23451
11 12	.04353	.03573	.03126 .03533	.02600 .03004	
13	.03940 .04353 .04770 .05189	.03982	.03533	.03413	
14 15	.05612	.04809 .05229	.04356 .04772	.03823 .04238	
16	.05612 .06035	.05229 .05650	.04772 .05191	.04656	Rudorf, 1903
17 18	.06896	.06074 .06502	.05614 .06038	.05076 .05501	N d
19	.07329	.06933	.06467	.05927	
20 21	.06464 .06896 .07329 .07767 .08208	.07366 .07804	.06898 .07333	.06358 .06793	25°
22 23	.08652 .09100	.08244	.07771	.07230	$\begin{array}{c} 0 & 0.9971 \\ 0.062 & 1.0006 \end{array}$
II 24	.09100	.08244 .08688 .09135	.07771 .08212 .08657 .09106	.07671 .08116	0.125 .0047
25	. 10005	בא בעוו	.09106	.08563	0.25 .0130
26 27	.10461	.10039 .10496 .10957	.09557 .10012	.09014 .09467	0.50 .0292 1.00 .0619
H 28	.10921 .11386 .11853	10957	10470	. 09925	
29 30		.11421	.10932 .11398 .11866 .12340	. 10386 . 10850	
31	.12798	.11888 .12359	.11866	. 11319	
32 33	.13276 .13 7 58	. 12834	. 12340	.11792 .12268	Jones, 1904 and Jones and Getman, 1904
1 34	.12324 .12798 .13276 .13758 .14241 .14730	.12834 .13312 .13794 .14279	.12816 .13295 .13779	. 12746	
35 36	. 15221		. 14265	.13228 .13715	M d M d
37	15717	. 15261 . 15756 . 16257 . 16759 . 17267 . 17777 . 18292 . 18809	. 14 7 56 . 15 2 49	. 14204	0 °
38 39	.16214 .16718	.15/56	. 15749 . 15 7 48	. 14696 . 15193	0.2 1.023616 1.2 1.147680
40	. 17214	. 16759	. 15748 . 16248 . 16753 . 17262 . 17774	. 15693	8 4 049552 4 173764
41 42	.17734	.17777	. 10/53	.16197 .16704	.6 .074540 .6 .195048 .8 .100312 .8 .219296 1.0 .122720 2.0 .244020
43 44	.18765	.18292	17774	. 17215	1.0 .122720 2.0 .244020
45	. 13717 . 16214 . 16718 . 17214 . 17734 . 18248 . 18765 . 19287 . 19812	. 17002	.18290	.17728 .18247	
46 47	• 40041	. 19856	. 19334	. 18768	
48	.20874 .21411	.20386 .20919	.19861 .20392	.19294 .19822	W. 6.11 1004
49 50	.21950 .22495	.21456	.20926	. 20355	Herzfeld, 1904
51	.23043	.20919 .21456 .21996 .22541	. 20392 . 20926 . 21465 . 22006 . 22552	.20891 .21430	% t d
52 53	.23594 .24149	23089	.22552 .23101	.21974 .22522	
54	. 24708	. 23642 . 24197	. 23655	.23073	sat.sol.
55 56	. 25 27 1 . 25 838	.24756 .25320	. 24211 . 24773	.23629 .24189	65.41 0 1.3224 66.14 10 .3269
57	. 26409	. 25888 . 26459	. 25 337	. 247 53	66.93 20 .3317
58 59	.26983 .27562	. 26459 . 27035	. 25906 . 26479	. 25 320 . 25 89 2	67.81 30 .3372 68.73 40 .3429
60	. 28144	. 27615	. 27058	. 26468	69.72 50 .3491
61	.28731 .29320	.28199 .28786	.27638 .28224	. 27049 . 27632	70.77 60 .3557 71.30 65 .3591
63	. 29914	. 29378	.28813	.28222	1,0071
64 65	.30513 .31113	.29973 .30571	.29406 .30002	.28813 .29408	
66	.31720	.31174	. 30604	. 30007	
67 68	.32329 .32943	.31782 .32392	.31209 .31818	.30613 .31220	
69	. 33559	. 33007	. 32430	.31832	
70	. 34181	. 33625	. 33047	.32447	
1		_	_		

						, , , , , , , , , , , , , , , , , , ,			
Zoppellari,	1905				Pissa	rewsky and l	Karp, 190	8	
% t	d	%	t	d	М	d	M	d	سے میں بین دین الدیا آئی ایس القیادی میں سے جس جس جس میں اندیا نہیں الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا الدیا
0 20 7.6982 19. 16.0488 20.	0.99820 1 1.02944 9 1.06387	34.2826 44.0205 51.0878	20.5 21 21	1.14779 .19149 .23513	0.094 .178 .250	.0239	0.357 .500 .714	1.0476 .0666 .0957	
Morse and F	razer, 1905				:=====	کنید و این دادن دادن دادن دادن اس کنید کار دادن دادن دادن دادن دادن دادن دادن دا	میں میں کیو شین امیر امیرانک اکیا امیرا میں شین شین امیر امیں امیر امیر امیر امیر	ی امیرانی سی ادر می هی این این این امی ام کی سال این رخین شیر شد امر مین مین این امی امی امر امی اما امی امی	ليون اليون شايد خير حيد بدين شايد القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر القب فهير القبر القبر القبر التي أنهم "أهم القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر القبر
m %	d	m	%	d	Anoi	nymous, 1910	0		
, and , and , and , and , and , and , and , and , and , and , and , and , and , and	20	0			%	d	8	d	
0.05 1.71 .10 3.31 .20 6.41 .25 7.88 .30 9.32 .40 12.05 .50 14.61	.025328 .031240 .037120 .048460	0.60 .70 .75 .80 .90 1.00	17.04 19.32 20.43 21.50 23.56 25.49	1.069858 .079935 .084805 .089603 .098920 .107915	0 1 2 3 4 5 6 7 8	0.998234 1.002120 .006015 .009934 .010881 .017854 .021855 .025885	50 51 52 53 54 55 56 57	1,229567 ,235085 ,240641 ,246234 ,251866 ,257535 ,263243 ,268989	
	er and al.,		سيدانين شدر حدر سن شين النب		8 9 10 11	.029942 .034029 .038143 .042288	58 59 60 61	.274774 .280595 .286456 .292354	
t	maxim. d	t	d		12 13	.046462 .050665	6 2 63	.298291 .304267	
0.1 +4.2 .2 +3.2 .3 +1.0 .4 -0.4 .5 -1.9 .6 -3.7 .7 -5.0 .8 -6.0 .9 -7.5	.03787 .04953	-0.195 .393 .584 .784 .989 -1.190 .390 .621 .829 -2.066	1.0130 .0257 .0378 .0495 .0606 .0713 .0817 .0915 .1011	40 670 110 70 75 35 95 75	14 15 16 17 18 19 20 21 22 23 24 25 26	.054900 .059165 .063460 .067789 .072147 .076537 .080959 .085414 .089900 .094420 .098971 .103557 .112828	64 65 66 67 68 69 70 71 72 73 74 75	.310282 .316334 .322425 .328554 .334722 .340928 .347174 .353456 .359778 .366139 .372536 .378971 .385446	
	Marek, 1906 See author (Density .)						77 78 79 80 81 82 83 84	.391956 .398505 .405091 .411715 .418374 .425072 .431807	
Getman and Wilson, 1908					34 35 36 37 38 39 40 41 42 43 44 45 46 47	.146345 .151275 .156238 .161236 .161236 .161236 .171340 .176447 .181592 .186773 .191993 .197247 .202540 .207870 .213238	85 86 87 88 89 90 91 92 93 94 95 96	.438579 .445388 .452232 .459114 .466032 .472986 .479976 .487002 .494063 .501158 .508289 .515455 .522656 .522891	
		107 107 107 107 107 107 107 107 107 107			47 48 49	.218643 .224086	98 99 =======	.537161 .544462	

Varga, 1911	Pulvermacher, 1920
% d % d	% d-
18°	25°
0.5974 1.000948 25.9710 1.109189 1.0771 .002814 30.7358 .131789 1.9974 .006421 35.4832 .155465 3.0968 .010764 40.4912 .181230 4.5130 .016405 45.0000 .203770 9.9999 .038756 50.0000 .230155 13.9001 .055155 60.0000 .287216 20.3841 .083525 100.0000 .587681	1.00 1.0009 2.00 .0048 4.85 .0160 9.98 .0367 14.78 .0568 20.10 .0797
	Stocker, 1920
Golse, 1911	% t d
g d g d	0 19.7 0.9983 8.71 19.9 1.0328
16.5°	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
2.97 1.0107 11.04 1.043 4.63 .0169 16.06 .064 4.95 .0181 18.36 .074	43
6.35 .0239 21.48 .086 6.86 .0256 21.66 .089	38 N
8.49 .0325 29.91 .128 9.29 .0360 36.91 .132 9.72 .0371 40.09 .178	29 111161, 1720
18.5°	c d c d
5.01 1.0185 31.00 1.13 9.77 .0379 34.80 1.51 14.20 .0561 38.53 1.66 18.67 .0758 42.14 1.8 22.92 .0942 49.12 .225 26.98 .1134	1 1.00382 28 1.10763 04 2 .00765 32 .12311 85 2 .00765 32 .12311
Butler, 1912	7 .02680 52 .19981 8 .03063 56 .21486 9 .03447 60 .22975 10 .03830 64 .24458
vol % d	12 .04598 68 .25934 14 .05367 72 .27405
15° 6.48 1.02422 13.39 .05082 20.52 .07806 27.67 .10560 32.62 .12393	16 .06136 76 .28869 18 .06905 80 .30326 20 .07676 84 .31778 24 .09218 88 .33223
Herz, 1918	
% d	
20° 40 1.1768 20 .0814 10 .0380 5 .0180 0 .0022	

Downes and Perm	an, 1927		Perman an	d Urry, 193	30			
% d	×	đ	%	đ	%	d		
40°	5	0°	- 30°	0	40	0		
8.608 1.02 17.42 .05 25.75 .08 35.98 .12 46.70 .16 57.15 .20 65.98 .23 81.06 .29 90.80 .32	9 17.32 17 25.64 8 35.83 7 46.49 7 56.87 6 65.64 3 80.61 9 90.38	1.021 .053 .082 .123 .162 .201 .231 .286 .323	5.20 14.67 22.27 40.96 57.05 69.16 79.75		5.18 14.61 22.18 40.81 56.75 68.93 79.41			
60°		65°	5.16 14.56	1.008	5.14 14.51 21.02	1,004 .040 .068		
8.533 1.01 17.26 .04 21.79 .06 25.33 .07 35.63 .11 42.47 .14 46.17 .15 56.54 .19 65.34 .22 80.37 .28 89.97 .31	9 19.73 4 27.77 32.90 7 42.85 1 54.83 4 70.86 4 86.06 5 88.76 2	1.016 .056 .085 .104 .142 .184 .246 .302	22.11 40.60 56.57 68.60 78.94 70 5.12 14.41 21.90 40.21	0.772 .140 .200 .243 .280 0° 0.999 1.033 .062 .129	40.42 56.23 68.22 78.57 80 5.07 14.32 21.73 39.99	.135 .193 .236 .274		
70°		75°	55.97 67.78	.187 .228	55.68 61.51	.123 .181		
8.482 1.01 10.10 .01 17.17 .04 25.40 .07 29.20 .09 35.44 .11 45.97 .14 56.27 .18 64.91 .21 79.82 .27 89.35 .30	6 19.57 4 27.72 23.73 0 42.63 1 54.50 9 70.58 8 85.67 7 88.59	1.009 .047 .083 .098 .136 .177 .242 .296 .307	Brewster a	Brewster and Phleps, 1933 Density see author . From Brix's Tables				
5,697 0.99	4 44,48	1.140						
10.12 1.01 19.16 .04	0 53.93 5 69.92	.176 .229	Keffler an	d Mc Lean,	1935			
26.33 .07 35.34 .10	2 78.11	.265 .322		t	đ			
			=	40	%			
Helderman, 192				0 30 60 90	1.18 .17 .15 .13	25 68		
<u> </u>	đ	····	_					
30			Paccineliu	1047				
4.92 9.92 14.82	1.01489 .03494 .05536		Passynsky	, 1947 d				
17.02	.00000		I	:0°				
			4.47 7.25 12.52 18.34	1.0 .0	0155 0268 0480 0740			

Expansion	and	compressibility	coefficient
-----------	-----	-----------------	-------------

Mascart and Benard, 1899							
t		τ.105					
c (15°)	15	20	25				
10 - 15 15 - 20 20 - 25 25 - 30 15 - 30	19 24 27 32 278	22 25 29 32 287	24 27 30 34 302				

Schönrock, 1900

Expansion coefficient = 0.000291 + 0.0000037 (p - 23.7) + 0.0000066 (t - 20) - 0.0000019 (p - 23.7) (t - 20), where p and 23.7 are weight % and t and 20 are temperature .

Thorner, 1908

%		Dv (%)	
	0 - 100°		
0 20 50		4.25 4.40 4.60	

Tait, 1898

%		π			
	1-1000kg	1000-2000kg	2000-3000kg		
		12.4°			
0 4.8 9.1 13.0 16.7	46.50 44.30 42.65 41.09 39.85	45.20 43.16 41.60 40.13 38.75	44.10 42.10 40.65 39.20 37.89		

Cohen and de Boer, 1913

	P	π		P	π
	18.64 %			0 %	
238.5 313.5 423.1 643.5 630.4	- 423.1 - 643.5 - 630.4 - 860.0 - 893.2	36.7 35.5 34.7 33.7	200 300 400 500 600	- 300 - 400 - 500 - 600 -7 700	42.8 41.9 41.1 39.8 39.1
853.2 860.0 1017.0 1252.0	- 1017.0 - 1340.0 - 1252.0 - 1509.0	32.9 30.1 29.6 29.1	700 800 900 1 0 00	- 8 00 - 900 - 1000 - 1500	38.2 37.0 36.3 33.2

Berkeley, Hartley and Burton, 1919

%	π		
	0°	30°	
0 25.4 36.1 44.8 52.8 58.5 64.7 68.5 70.8	50.7 34.6 27.8 25.3 23.3 22.0	44.5 36.2 36.1 30.0 27.3 25.6 23.6 22.8 21.5	

Perman and Urry, 1930

۱.						
ľ	%	π		%	π	
	0-	-100atm.10	00-200a tm	١.	0-100atm	.100-200atm
	30)°			40°	
	5.20 14.67 22.27 40.96 57.05 69.16 79.75	43.6 40.0 37.8 33.15 29.2 26.8 24.6	41.71 39.0 37.0 32.2 28.6 26.1 24.4	5.18 14.61 22.18 40.81 56.75 68.93 79.41	42.2 39.8 37.6 33.4 29.4 26.8 24.8	41.0 38.5 36.9 32.0 28.6 26.3 24.5
	5	0°			60°	
	5.16 14.56 22.11 40.60 56.57 68.60	42.01 39.8 37.9 33.2 29.7 27.2	41.31 38.8 36.7 32.5 29.2 26.6	5.14 14.51 21.02 40.42 56.23 68.22 78.57	42.5 40.1 38.1 33.5 30.1 28.0 26.1	41.5 39.1 37.1 33.1 29.4 27.1 25.0
70°					80°	
	15.12 14.41 21.90 40.21 55.97 67.78 78.14	43.0 40.7 38.7 34.3 30.8 28.5 26.5	41.9 39.5 37.7 33.6 30.0 27.7 25.7	5.07 14.32 21.73 39.99 55.68 61.51 77.71	44.1 41.4 39.8 35.2 31.7 29.6 27.5	42.8 40.4 38.5 34.4 30.55 28.2 26.3

Passynsky, 1947	Pi		ky and Ka		8 		water=1)
π π		М	η (wate	12°			
20° 4.47 44.24 7.25 43.29 12.52 41.54 18.34 40.03	0	.094 0.178 0.250	1.09 1.18 1.24	08 375	0.357 0.500 0.714		1.4371 1.6962 2.2718
	Ho	sking,	1909				
Busz, 1938	t			η			
% sound velocity m/sec.		0%	1%	5%	10%	20%	40%
0 1480 12.5 1530 25 1580	0 5 10 15 20 25 30	1794 1520 1309 1143 1009	1810 1537 1331 1168 1031 911	2048 1729 1488 1292 1139 1009	2436 2050 1754 1518 1328 1173 1041	3720 3042 2578 2212 1910 1674 1485	14760 11330 8950 7300 6070 5080 4233
Passynsky, 1947 % sound velocity m/sec.	35 40 45 50	802 724 657 601 553	812 737 670 609 555 511	90 1 809 732 668 611	933 843 763 699 640	1319 1180 1059 961	3618 3132 2728 2410 2140
20°	55 60 65	510 472 437	473	564 521 487	592 549	799 732	1908 1722
4.47 1491.8 7.25 1499.9 12.52 1515.5 18.34 1525.0	65 70 75 80 85 90	407 382 360 339 320	438 410 387 362 340 320	455 427 399 377 349	512 480 448 421 389	799 732 676 629 586 548 511	1553 1414 1288 1182 1093
Pryor and Roscoe, 1954	Ort	h, 1 911					
% sound velocity m/sec.		%	20		η (Η ₂ 0 ^{20:} 30°	=1) 40°	50°
20° 40° 60° 0 1479 1527 1551 40 1650 1674 1677 60 1801 1800 1790 69 1884 –		60 62 64 66 68 70 72 74	62 85 123 188 308 549 1078 2374	9 2 7 5 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	133 554 741 014 540 142]	322 392 494 647 886 1279	254 298 358 443 570 764 1076
Viscosity and surface tension		76	5967			3 247 5416	1605 2563
		%			n (H80so	=1)	
Rudorf, 1903			60		70°	80°	90°
M η M η 25° 0 895 0.25 954 0.062 900 0.50 1040 0.125 916 1.00 1255		60 62 64 66 68 70 72 74	210 239 276 320 401 506 665 915 1330	9 2 5 2 8 2 1 3 5 4	25 258 302 365 53 85	161 174 191 213 242 281 334 409 519	146 155 167 183 202 228 262 308 372

Herz, 1918		Muhlendahl,	, 1927			
% n		t	η		t	η
20°		_		60 %		
1 1031 5 1127 10 1322 20 1910 40 6004		16.0 17.0 19.0 21.0	64500 62100 54100 47500) 	23.0 25.0 28.0	42300 36900 30800
		15.5 17.0 19.0 22.0	97200 87200 75000 63400		24.0 26.5 29.0	55300 46100 39800
Bingham and Jackson, 1918		16.0	142200	64 %	24.0	80300
tη	t η	18.0 20.0	121100 107500		27.0 29.0	65300 55700
0	60 470 70 406 80 356	22.5 19.0	84300 190300	66 %	31.5	47500 117200
30 802 40 653 50 550	80 356 90 315 100 282	23.0	136800		29.0	88600
20.00 g 0.44 3731 9.96 2659 9.98 1962	45.00 1070 54.99 884.2	Taimni, 1929)			
9.98 1962 24.99 1705 35.00 1332	64.96 871.8 74.94 635.3 85.03 549.9	50°	45°	η 40°	35°	30°
0.32 14510 9.96 9246 14.97 7490 19.98 6250 24.99 5180 30.00 4384 35.00 3761 40.00 3247	45.00 2845 50.00 2497 54.99 2218 64.96 1779 74.94 1463 85.03 1219 95.30 1032	70.0 68000 72.0 102000 75.0 202000 76.5 311000 77.8 455000	88000 135000 283000 450000 685000	120000 190000 400000 660000 1088000	167000 270000 605000 1042000 1625000	237000 396000 980000 1650000
59.94 % 9.96 110100 24.99 44200	64.96 9 2 83	Bennett and	Nees, 19	30		
35.00 26330	74.94 6243 85.03 4698 94.30 3882	9	<i>i</i>	t	η	
54.99 11580 Pulvermacher, 1920	94.30 3882	67. 68. 70. 72. 74. 76.	.70 .42 .25 .18	25 30 40 50 60 70		000 000
% ⁿ (water=1) %	η(water=1)					
25°	trader 17	Sprenglin a	nd Landt,	1930		
1.00 1.026 9.98 2.00 .054 14.78 4.85 .141 20.10	1.329 .570 .917	10.20 29.90 44.85 50.20 55.00 57.30 61.55 62.95	1370 3210 9120 15600 27700 38300 74600 95300		\$ 64.5 66.2 67.0 67.05 67.8 68.9 70.4	126800 180700 219000 223800 289000 355800 499500

Busz, 1938	Smolensk	i and Kozlowsk	ki, 1931	
β η (water=1)	%	σ	%	3
14 - 16°		209	0	
0 1.0 12.5 1.1 25 1.6	0 5 10 15 20 25 30	73.00 73.44 73.88 74.31 74.75 75.19 75.63	40 76 45 77 50 77 55 77	.07 .50 .02 .45 .48
Delachanal, 1877				
Surface tension as function of areometric degrees Brix.	Optical a	and electrical	properties	
	Barbier	and Roux, 1890)	
Traube, 1885	С	t	dispersive	power
% o 15° 0 73.26 4.76 72.50	10.0 20.0 40.0 50.0 60.0	12.1 11.2 10.7 12.4 11.1	0.355 .367 .389 .397 .406	
9.09 72.92 16.67 73.39	Strohmer,	1884		
Forch, 1899	%	n _D	\$	n _D
M t d 0.53 18.00 73.58 .265 18.25 73.27 .132 13.00 73.12 Piepenstock, 1908	0 1 2 3 4 5 6 7	1.3332 .3355 .3368 .3381 .3394 .3407 .3420 .3433	26 27 28 29 30 31 32 33 34 35 36	1,3703 .3719 .3734 .3750 .3765 .3781 .3797 .3812
Surface tension (see author) .	9 10 11 12 13	.3477 .3460 .3474 .3487 .3501 .3515	35 36 37 38 39 40	.3829 .3845 .3862 .3878 .3895 .3912 .3828
Stocker, 1920	14 15 16 17 18 19	.3542 .3557 .3571 .3585 .3594	41 42 43 44 45	.3846 .3863 .3880 .3897 .4015
0 19.7 72.28 8.71 19.9 72.76 10.73 19.5 73.13 23.63 16.6 73.47	20 21 22 23 24 25	.3614 .3628 .3643 .3658 .3673 .3688	46 47 48 49 50	.3832 .3850 .3868 .3886 .4105

Γ								A 10				
] ,	Kanonni	ikoff, 188	35				Wagner	r, 1903				
-	16	t	r		_		С	n _D	С	n _D	С	n _D
 	Hα D Hβ									.5°		
il	6.42 8.7 1.48 5	20.4	.34410	.34600 .35042	.346650 .350500 .355250 .361072	ليد ليد نيدنند تند متر الدامة كيد كيدي بالدامة الدامة الدامة	0 0.264 0.528 0.791 1.054 1.317 1.580	1.33320 .33358 .33397 .33435 .33474 .33513 .33551	7.610 7.870 8.130 8.390 8.650 8.910 9.170	1,34426 ,34464 ,34500 ,34537 ,34575 ,34612	15.119 15.376 15.633 15.890	1.35461 .35497 .35533 .35569 .35606 .35642 .35678
K	anonni	koff, 189	4				1.843 2.106 2.369 2.633	.33590 .33628 .33667 .33705	9.430 9.690 9.950 10.209	.34650 .34687 .34724 .34761 .34798	16.658 16.914 17.170	.35714 .35750 .35786
	%	n _D	Я	n _D			2.897 3.160	.33743	10.468 10.727	.34836	17.681 17.936	. 35822 . 35858 . 35894
		20)°				3.423 3.686 3.949	.33820 .33858 .33891	10.986	.34910	18.191 18.446	. 35930 . 35966
	0 10.01 14.97 20.85 25.95 30.64	1.33298 .34796 .35656 .3661 .37392 .38246	36.80 40.72 2 44.91 2 49.71	1.389 .393 .401 .409 .419	63 24 32 46		4.212 4.475 4.738 5.001 5.262 5.523 5.784	.33934 .33972 .34010 .34048 .34086 .34124 .34162	11.504 11.763 12.022 12.281 12.540 12.798 13.056 13.314	.34984 .35021 .35058 .35095 .35132 .35169 .35205 .35242 .35279	19.212 19.466 19.721	.36002 .36038 .36074 .36109 .36145 .36181 .35217
l		ssen, 189	8	n			6.045 6.306 6.567 6.828 7.089 7.350	.34199 .34237 .34275 .34313 .34350 .34388	13.572 13.830 14.088 14.346 14.604	.35279 .35316 .35352 .35388 .35425	21.236	. 36287 . 36323 . 36359 . 36394 . 36429
%	t	$\mathbf{Li}\alpha$	Нα	D	НЗ	Hr	====					
0 0 1 2	19.0 35.2 19.0	1.33097 .32938 .33231 .33374	1,33130 .32971 .33271	1.33318 .33161 .33457 .33596	1.33726 .33558 .33862 .34001	1.34042 .33889 .34193 .34328	Zoppe	11ari, 1905 %	t		<u>.</u>	
2 3 4	19.0 19.0 19.0	.33532	.33403 .33579 .33705	.33754 .33907 .34047	.34146 .34313	.34490 .34648		, p	···		n _D	
4 5 10 10 15 20 20	19.0 19.0 35.8 19.0 19.0	.33820 .34541 .34383 .35361 .36167 .35953	.33849 .34579 .34418 .35392 .36201 .35989	.34775 .34602 .35588 .36385 .36168	.34471 .35192 .35030 .36018 .36829 .36601	.34804 .35531 .35356 .36360 .37187 .36950		7.6982 16.0488 34.2826 44.0205 51.0878	19 20 20 21 21	.9 .5	1.34454 .35752 .38913 .40580 .42330	
25 30 30 35 40 40	19.0 19.0 36.2 19.0 19.0	.37024 .37905 .37671 .38836 .39774 .39509	.37067 .37945 .37699 .38873 .39812 .39546	.37254 .38137 .37896 .39077 .40016 .39758	.37708 .38597 .38351 .39531 .40490 .40212	.38078 .38962 .38722 .39915 .40876 .40607	Main,	, 1907				
45 50 50	19.0 19.0 37.2	.40751 .41809 .41500	.40793 .41854 .41542	.40998 .42050 .41732	.41477 .42570 .42268	.41864 .42940 .42626	7.	n (Abb		%	n (Abbe)	
55 60 60	19.0 19.0 37.0 19.0 33.8 19.0	.41300 .42860 .44003 .43677 .46346 .46086 .47471	.41342 .42905 .44039 .43718 .46389 .46123	.41732 .42113 .44250 .43918 .46611 .46347 .47750	.43621 .44777 .44452 .47151 .46881	.44016 .45180 .44849 .47568 .47295	85.0 83.8 80.0 76.1 72.0 67.8 63.5 59.2	1.5033 .5001 .4901 .4802 .4700 .4600 .4500		45.3 40.2 34.9 29.5 23.8 17.8 11.6 5.0	1.4101 .4001 .3900 .3801 .3701 .3600 .3500	
							54.8 50.0	.4300 .4201		0.0	.3330	

Getman a	and Wilson, 1	908	· · · · · · · · · · · · · · · · · · ·	Miller a	and Worley, 191	18	
%	O ⁿ	K	n _D	Z	n _D	%	n _D
5 10 15	1,34050 .34750 .35570	17,5° 20 25 30	1, 36378 , 37213 , 38086	72.51 73.52 74.55 75.46 76.27	1.47605 .47858 .48150 .48378 .48603	0° 77.54 77.55 78.41 79.47 80.54	1.48953 .48896 .49147 .49433 .49729
Golse,	1911			t	n _D	t	n _D
%	n _D	×	n _D	48.5	1.48063	78.37 % 73.5	1.47500
2.97 4.63	1.3377 .3400	16.5° 11.04	1.3498	60.7 61.4	.47801	74.3	.47486
4.95 6.35 6.86 8.49	.3404 .3404 .3425 .3433 .3457	16.60 18.36 21.48 21.66 29.91	.3577 .3615 .3666 .3669 .3813	Pulverm	acher, 1920		
9.29 9.72	.3470 .3476	30.91 40.09	.3836 .4006	%	n _D	%	n _D
5.91 9.77 14.20 18.67 22.92	1.3406 .3478 .3546 .3618	18.5° 31.00 34.80 38.53 42.14	1.3835 .3902 .3974 .4042	1.00 2.00 4.85	1.3349 .3312 .3404	25° 9.98 14.78 20.10	1.3482 .3556 .3644
26.98	.3689	49,12 58,59	.4184				
Schonro	ck, 1911			Schönro	ock, 1921		
	n _D	% n _D		%	n C D	E	
	20°	U		i	20°)	
0 1 2 3 4 5	1,3330 .3344 .3359 .3374 .3388 .3403	33 1,3865 34 3883 35 3902 36 3920 37 3939 38 3958 39 3978		0 26.712 49.509 64.577	.41681 .41	3299 1.33713 5527 .37980 1.896 .42390 5224 .45749	
0 1 2 3 4 5 6 7 8 9 10	.3418 .3433 .3448 .3464 .3479 .3494	40 .3997 41 .4016 42 .4036 43 .4056 44 .4076		Tressle	r, Zimmerman a	nd Willits, 1941	L
12 13	.3510 .3526	45 .4096 46 .4117 47 4137		%	n _D	[%] n _D	
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	.3541 .3557 .3573 .3590 .3606 .3622 .3639 .3655 .3672 .3689 .3706 .3723 .3740 .3758 .3775 .3793 .3811 .3829 .3847	47 4137 48 4158 49 4179 50 4200 51 4221 52 4242 53 4264 54 4285 55 4307 56 4329 57 4351 58 4373 59 4396 60 4418 61 4441 62 4464 63 4486 64 4555 66 4555		0.0 4.8 14.5 24.4 31.0 34.4 37,4 42.4 45.3 48.4 50.8	.3549 .3712 .3829 .3890 .3948 .4045 .4102 .4161	52.5 1.4253 54.2 .4290 55.0 .4308 55.4 .4315 59.2 .4400 62.5 .4475 65.6 .4546 68.3 .4610 69.9 .4649 70.5 .4663 71.9 .4698	

Andrews, 1889 7 t (α) _D 23.686 18.5 66.415 - 41.5 66.174 15.344 19.0 66.642 - 39.9 66.405 - 20.1 66.664 Hammerschmidt, 1889	Schönrock, 1900 23.65% - 23.70% 17.5° (α) _D = 65.803 -66.581 temperature coefficient = 0.000217 ± 0.000009 Butler, 1912 vol% α 15°
^χ (α) _D	6.48 8.39 13.39 17.49 20.52 27.15
20°	20.52 27.67 27.67 27.67
22.68 66.457	
Nasini and Villavecchia, 1892 % (α) _D % (α) _D	Bruhat and Chatelain, 1932 Rotatory dispersion 5461Å 4358Å 4056Å 3657Å
20°	
2.9467 66.611 21.7080 66.347 5.0204 66.259 24.5326 66.641 5.5697 66.520 24.7285 66.633 5.7091 66.552 25.4953 66.599 5.7353 66.492 25.8070 66.365 6.4318 66.492 25.3826 66.327 6.6719 66.348 26.2443 66.487 7.0689 66.495 26.3220 66.467 7.5149 66.339 27.0406 66.568 8.5353 66.535 27.4488 66.492 10.5906 66.490 27.8493 66.339 10.6479 66.403 31.4207 66.238 10.8704 66.427 31.5643 66.381 11.7761 66.627 42.2459 66.185 11.9272 66.639 44.2459 66.349 12.4323 66.464 44.6549 66.254 12.8951 66.537 45.5892 66.206 13.1471 66.591	26 0.848 0.517 0.436 0.344 16 .849 .514 .436 .346 10 .852 .518 .438 .351 26 0.849 0.518 0.438 0.345 16 .851 .518 .439 .348 10 .848 .514 .435 .349 Two series Rotatory dispersion, between (α) _D and (α) considered Kreinin, 1945 (fig.)
18.8341 66.483 49.9782 66.088 18.8891 66.477 50.0658 66.093 19.9158 66.518 50.2615 66.046 20.1591 66.368 52.6068 66.081 20.4244 66.509 55.7431 66.096 20.4274 66.242 57.6979 65.869 20.4459 66.264 60.1063 65.810 20.9334 66.509 60.6579 65.762 21.0608 66.488 62.4821 65.611 21.6100 66.533 65.1676 65.820	w.l. (in cm) 30.49 42.0 49.1 68.2 19° 0 11 28 10 4 20 25 50 20 10 40 48 72 38 24 60 76 105 65 40 N.B. The authors give also curves for w.l. = 143.6, 194.4, 238.4, 303.6, 375.6, 438.2 and 500.4

Harrington, 1916	Kockel, 1925	5		
Ν ε Ν ε	t	ε	t	ε.
18° 0 78.73 0.7 73.84 0.1 77.64 0.9 72.52 .2 76.73 1.0 71.84 .4 75.53 1.2 70.36 .5 75.05 1.4 68.67 .6 74.46	0 3.95 9.8 15.0 20.3 25.0 30.2	87.90 86.29 83.97 81.99 79.67 77.81 76.10	39.0 50.1 59.4 70.3 79.0 89.5 98.7	72.51 68.93 65.73 62.77 60.80 58.31 55.51
Lattey, 1921 % t ε (sol.) ε (0%) 6.84 13 81.2 82.80 11.92 14 69.8 82.45 20.60 16 79.0 81.75	0 0.7 1.3 1.6 2.7 3.3 4.0 4.2 5.2 5.6 6.4	5 86.64 86.21 86.02 85.81 85.51 85.17 84.91 84.90 84.39 84.14 83.74	7.0 8.1 8.1 8.65 9.4 10.4 11.4 12.3 13.5 14.43	83.49 83.19 83.09 82.81 82.69 82.20 81.80 81.46 81.03 80.66
Fürth, 1923	7.6 9.2 11.8 13.3 13.5 13.8 13.95 15.6 17.5 18.8 19.4 22.3 26.9 29.8 30.0 37.7 43.5	83.36 82.77 81.59 81.01 80.94 80.96 80.81 80.17 79.14 78.94 78.73 77.81 75.91 74.66 71.84 69.86	49.5 53.6 56.5 60.6 76.7 75.8 86.8 92.1 92.3 95.5 97.0 99.0	67.97 66.76 65.73 64.56 62.80 60.14 59.30 57.37 56.11 56.29 55.17 54.61 53
	0 2.2 3.3 5.4 8.2 10.7 12.9 14.0 14.6 18.4 19.5 20.9 25.3 29.0 34.0	85.49 84.54 84.04 83.13 81.97 81.11 80.17 79.66 79.58 79.41 77.87 77.77 77.50 76.97 75.23 73.83 71.97	39.5 44.6 49.6 50.5 55.2 60.0 64.9 69.5 76.5 80.0 84.5 89.1 94.3 99.3	70.10 68.37 66.76 66.49 65.04 63.56 62.14 60.91 58.01 56.80 56.64 55.40 54.10 52.59 52.56

t	ε	t	ε	
- 1.5		0 %	69.54	Åkerlöf, 1932
0 + 1.7= 3.3	87.26 82.77 81.99 81.33	34 38 44 50	67.84 66.23 64.37	t ε 0% 10% 20% 30%
7.9 10.45 13.55 15.4 15.8 16.4 17.1 17.4 19.9 24.9 25.0 30.1	80.43 79.39 78.40 77.23 76.54 76.03 75.83 75.47 74.63 72.81 72.74	50 54 56 60 65 74 79 85 89 94	64.31 62.81 62.41 61.37 60.00 58.00 57.50 55.90 54.39 53.04 51.50	10 84.2 81.5 78.8 75.9 20 80.4 78.0 75.4 72.6 30 76.7 74.2 71.7 68.9 40 73.1 70.7 68.3 65.7 50 69.9 67.5 65.0 62.5 60 66.6 64.4 62.0 59.4 70 63.5 61.2 58.8 56.2 80 60.6 58.2 55.8 53.2 90 57.8 55.4 52.9 50.4 100 55.1 52.7 50.2 47.6
- 2.15	80.66	0 ≰ 43.3	63.77	t ε 40% 50% 60% 70%
- 1.7 0 + 2.6 5.0 6.9 10.15 13.25 15.5 15.75 120.7 20.7 26.5 29.7 34.1	80.50 79.69 78.70 77.71 76.89 75.63 74.37 73.53 73.47 73.41 71.50	49.65 56.2 60.5 60.8 64.6 69.0 75.4 79.5 84.7 89.5 93.7 94.3	62 . 04 60 . 19 58 . 89 57 . 69 56 . 43 54 . 67 53 . 39 51 . 89 50 . 47 49 . 13 49 . 13 47 . 67	10 72.8
34.1 40.2	68.29 66.76 65.13	99.5 99.8	47.31 47.16	
- 3.5 - 3.2 - 1.2 + 0.4 1.1 4.15 6.6	78.00 77.93 77.19 76.60 76.19 74.93 73.96	33.1 36.95 41.9 48.2 52.2 57.5 63.2 67.7	64.54 63.24 61.75 60.00 58.90 57.37 55.76	Slevogt, 1939 Absorption and dispersion for different electric waves lengths in 30 %, 50 % and 65 % solutions.
9.6 12.9 14.9 15.5 17.4 18.9 19.1 22.4 27.4	72.67 71.43 70.71 70.46 69.81 69.37 69.26 65.07	67.7 72.4 76.3 81.6 86.0 90.4 95.6 100.7	54.44 53.07 51.89 50.34 49.09 47.89 46.34 44.53	Malmberg and Maryott, 1950 % ε 20° 25° 30°
27.4	66.31			
Kniepkamp,	1928			10 78.04 76.19 74.43 20 75.45 73.65 71.90 30 72.64 70.86 69.13 40 69.45 67.72 66.05 50 65.88 64.20 62.57
% 	ε 1	2		60 61.80 60.19 58.64
10 15 20	74.63 73.40 72.32	69.78 68.16 64.69		

Magie, 1901	Gucker Jr., and Ayres, 1937
mol% U	% U % U
room temp.	20° 25° 20° 25°
98.04 0.8479 99.01 .9115 99.34 .9375 99.50 .9609	0.3500 0.99793 0.99793 19.087 0.89137 0.89404 .4285 .99757 .99757 29.660 .83190 .83593 .6783 .99605 .99617 45.275 .74567 .75102 1.1184 .99343 .99376 52.267 .70769 .71354 1.3598 .99219 .99240 58.229 .67612 .68228 3.2338 .98149 - 66.548 .63251 .63895 8.3061 .95251 .95376
Hunter, 1926	
m U	
12° 20° 28°	Vallender and Perman, 1931
0.5 0.90 0.91 0.94 1.0 .81 .84 .88	% Q* % Q*
1.0 .81 .84 .88 2.0 .73 .75 .79 4.0 .69 .70 .74	58.94 -0.53 49.40 -0.25 56.98 -0.43 47.39 -0.18 55.03 -0.38 45.31 -0.15 51.27 -0.28
Vivien, 1926	63.39 1.68 46.49 0.57
ð U ð U	60.32 1.39 40.07 0.37
15°	56.51 1.19 34.84 0.26 55.05 1.06 30.18 0.21 53.62 0.92 25.88 0.13
1.00 1.00000 1.14 0.81560 .03 0.95661 .16 .79580 .04 .94277 .18 .77393	53.62 0.92 25.88 0.13 52.20 0.86 22.39 0.083 47.79 0.65 18.99 0.068
.04 .94277 .18 .77393 .05 .92920 .20 .75280 .06 .91590 .22 .73183 .07 .90281 .24 .71150 .08 .89001 .26 .69160 .09 .87746 .28 .67201 .10 .86514 .30 .65358 .12 .84122 .33 .62550	66.75
Holdomer, 1007	60° 67.97 -2.16 52.50 -1.10
Helderman, 1927 # U # U 0.00 0.9992 9.92 0.9495 4.92 0.9785 14.82 0.9209	66.23 -2.00 51.24 -1.03 64.59 -1.82 49.99 -0.96 63.23 -1.75 47.14 -0.81 63.07 -1.73 44.60 -0.73 61.77 -1.63 41.95 -0.59 59.78 -1.53 39.38 -0.54 58.90 -1.43 36.91 -0.48 56.67 -1.26 33.24 -0.36 53.83 -1.17 28.72 -0.28
Huttig and Wehling, 1927	80° 68.79 -2.02 48.82 -0.98 66.35 -1.87 43.83 -0.79
% U % U 4 - 40°	63.94 -1.75 42.23 -0.73 61.59 -1.64 36.10 -0.54 59.33 -1.48 29.91 -0.37 50.67 -1.14 23.52 -0.19
0 1 52.75 0.751 39.59 0.832 57.70 .722	*Q by gr. aq. added .
42.32 .815 62.43 .695 45.04 .798 100.00 .3227 48.68 .777	

Hunter, 1926			Water + Inverted sugar (C ₆ H ₁₂ O ₆)
m initial	final	Q dil.	Green, 1908
	12°		M d M d
3.0 1.5 1.0	2.72 1.35	-0.62 -0.21 -0.093	18° 25°
1.0 0.8 0.5	0.90 0.72 0.44	-0.093 -0.050 -0.010	0 0.9865 0 0.99712 0.1518 1.01884 0.1723 1.01976 .1565 .01945 .2779 .03358
4.0	16°		.3078 .03937 .3875 .04788 .3337 .04276 .6603 .08328 .6607 .08555 .7242 .09158 1.0439 .13520 .7947 .10062
4.0 3.0 2.0 1.5	3.62 2.77 1.87	-1.08 -0.67 -0.34	1.0439 .13520 .7947 .10062 .1468 .14842 .9629 .12228 .3609 .17580 1.1205 .14240
$ \begin{array}{c} 1.5 \\ 1.0 \\ 0.9 \end{array} $	$\begin{array}{c} 1.35 \\ 0.92 \\ 0.81 \end{array}$	-0.21 -0.11 -0.075	3650 .17632 .3472 .17124 4010 .18089 .5905 .20196
	18°	0.075	.8248 .23435 2.0517 .25964 2.1876 .27940 2.2710 .28676
4.0 3.0 1.5	3.59 2.78 1.38	-1.09 -0.73 -0.26	.5030 .31800 .6973 .34150
1.0 0.8 0.5	0.92 0.74 0.45	-0.102 -0.086	N n N n
	22°	-0.044	18° 25* 0 1058.0 0 895.3
3.0 2.0 1.5	2.77 1.79 1.34	-0.83 -0.43 -0.26	0.1518 1218.0 0.1723 1043.1 .1565 1220.9 .2779 1154.1
1.0	0.90 0.71	-0.12 -0.086	.3078 1427.9 .3875 1290.3 .3337 1473.0 .6603 1760.2 .6607 2149:6 .7242 1908.8
4.0	26° 3.71	-1.25	1.0439 3708.1 .7947 2091.4 .1468 4406.5 .9629 2638.7 .3609 6502.1 1.1205 3345.3
3.0 2.0 1.0	2.78 1.85 1.37	-0.869 -0.450	.3650 6528.1 .3472 4897.0 .4010 7007.6 .5905 7810.0 .4310 7551.5 .8255 13280.0
0.8 0.5	0.92 0.74	-0.298 -0.125 -0.066	. 8248 18223.0 2.0517 23880.0 2.1876 52362.0 2.2710 46580.0 .5030 170620.0
_	0.45 30°	-0.040	.6973 398360.0
4.0 3.0 2.0	3.62 2.72	-1.25 -0.82	
1.5 0.8	1.86 1.36 0.73	-0.47 -0.30 -0.11	
			Powell, 1914
			25° 30° 35° 40° 45° 50°
			0 895 802 725 659 603 554 9.66 1187 1047 932 846 767 707
			14.25 1378 1213 1078 971 875 796 18.66 1622 1433 1270 1138 1024 933 22.92 1951 1710 1504 1336 1191 1080
			27.04 2366 2049 1795 1593 1420 1278 31.03 2954 2539 2204 1949 1725 1546 34.88 3683 3132 2713 2364 2082 1858
			42.21 6171 5100 4321 3731 3232 2842 49.16 11490 9415 7781 6530 5524 4757

Water + Lactose (C ₁₂ H ₂₂ O ₁₁)	Whittier, 1933
	% f.t. % f.t.
Hudson, 1908	4.53 -0.280 22.23 -1.731
t p(1+1) t p(1+1)	8.65 -0.557 27.49 -2.353
sat.sol.	15.83 -1.125 36.09 -3.672
50 8.98 80 33.21 60 14.38 90 47.73	19.00 -1.426 39.61 -4.344
70 22.25 100 66.40	
t p (anh.)	Meiss1, 1880
sat.sol.	% d % d
60 7.3 70 12.4 80 24.6 90 43.3	17.5° 4.89 1.01964 18.91 1.07899 9.92 .04019 35.36 .15664 18.98 .07979
	Schmoeger, 1880 and Fleischmann and Wiegner, 1910
Jones, 1904 and Jones and Getman, 1904	% d % d
M f.t.	20°
0.2 -0.364 .3 -0.574 .4 -0.792 .5 -1.030	2.3554 1.0072 17.2680 1.0666 2.3652 .0071 17.9170 .0694 2.6242 .0082 20.0506 .0783 4.5820 .0157 20.3871 .0899 4.6680 .0162 23.6354 .0939 4.9346 .0170 24.3528 .0972
Hudson, 1908	5.0949 .0173 24.7852 .0992 5.2109 .0181 25.6825 .1033 8.3068 .0301 26.0811 .1049 10.1650 .0376 30.1814 .1233 10.6006 .0393 32.4619 .1341 10.4006 .0393 .10409
% f.t. % f.t.	11.3794 .0424 36.0776 .1513
10.6 0 29.8 49 14.5 15 39.7 64 17.8 25 46.3 74 24.0 39 58.2 89	11.4324 .0424 42.306 .1816 14.8548 .0566 50.881 .2260 15.9500 .0611 60.769 .2812 16.4120 .0631 62.046 .2888 16.6639 .0642 69.087 .3303
m f.t.	
0.3185 -0.591	Jones, 1904 and Jones and Getman, 1904
0.4805 _0.911	M d M d
Gillis, 1920	0 0.999868 0.4 1.047832 0.2 1.023172 0.5 1.060704 0.3 1.034984
% f.t. % f.t.	
	Fleischmann and Wiegner, 1910
34.9 57.1 63.9 107.0 39.1 63.9 69.4 121.5 45.8 73.5 73.2 133.6 49.6 79.1 75.3 138.8	% d % d
49.6 79.1 75.3 138.8 55.1 87.2 81.1 158.8 56.0 88.2 86.7 178.8	10 1.0370 50 1.2216 20 .0784 60 .2769 30 .1227 70 .3366 40 .1703 100 .5453

Golse, 1911			Kanonni	ikoff, 1894			
%	đ		%		n _D		
4.65 7.56 14.35 18.47 22.51 26.97	18.5° 1.0172 .0273 .0580 .0716 .0888 .1093		0 2.52 5.31 10.44 21.97	20°	1.3329 .3367 .3407 .3483 .3668	5 73 77	
Pulvermacher, 1920			Golse,	1911			
d	% d		%	n _D		%	n _D
1.28 1.0018	11.66 1.0448 17.06 .0681 23.38 .0969		4.65 7.56 14.35	1,3400 ,3438 ,3551	18.5°	18.47 22.51 26.97	1.3604 .3670 .3746
			Pulverm:	acher, 1920			
Mc Donald and Turc	otte, 1948		8	n _D		×	n _D
×	đ 20°	25°	0 1.28 2.78	1.3325 .3350 .3380	2 5°	11.66 17.06	1, 35 17 , 36 05
0.843 1.467 1.766 2.172 4.125 4.596 6.337 7.924 8.389 11.519 11.596 12.963 15.074 17.451 17.798 18.681	1.00490 1.00644 1.01570 	1.00024 1:00255 	5,80 Mc Dona 8 0.843 1.766 2.066 2.608 4.125 5.151	.3380 .3423 ld and Turco	n _D 20° 1.33551 1.33671 1.34038	25° 1.33371 1.33534 1.33841	
Pulvermacher, 1920 %	% n(wat 0 11.66 1.450 17.06 1.779 23.38 2.371	er=1)	5.292 6.337 7.134 7.924 10.023 11.519 11.567 15.074 16.533 19.351 20.468 23.933 25.504 28.145 30.257 35.258	1.3410 1.3480 1.3629 1.3701 1.3772 1.3919	1.34330 - 1.34988 1.34995 1.35765 - - - -	1.34158 1.34396 1.34933 1.35478 - 1.3634 1.3720 1.3800 1.3899	

	Water + Mannose (C ₁₂ H ₂₂ O ₁₁)
Meissl, 1880	nater - mannose (C12n22U11)
% (α) _D	Riiber and Minsaas, 1927
10° 17.5° 20° 30°	c % d
4.89 82.06 80.45 79.95 78.05 9.92 82.58 80.97 80.39 78.21	20°
18.98 83.32 81.71 81.15 79.05 18.91 83.20 81.72 81.26 79.20	0 0 0.948232 4.7007 4.63 1.016335
35.36 84.66 82.96 82.50 80.44	9.4574 9.14 1.034554 19.7439 18.38 1.073630
Schmoeger, 1880	c n _D
	20°
D m 2D	0 1.3330000 5.09087 .3402247
20°	10.04124 .3472317 10.18557 .3474361
2,3554 52.69 15.9500 52.56 2,3554 52.90 16.4120 52.50 2,3652 51.94 16.6639 52.45	
2,3652 51.94 16.6639 52.45 2,6242 52.38 17.2680 52.28 4,5820 53.18 17.9170 52.40	
4.6688 52.59 20.0506 52.63 4.9346 52.21 20.3871 52.60 5.0949 52.48 23.6354 52.35	Water + Maltose ($C_{12}H_{22}O_{11}$)
5.2109 52.40 24.3528 52.43	
8.3068 52.47 24.7852 52.49 10.1650 52.62 25.6825 52.64	Gillis, 1924
10.6006 52.66 26.0811 52.68 11.2220 52.30 30.1814 52.52	wt% mol% f.t.
11.3794 52.60 32.4619 52.59 11.4324 52.77 35.7690 52.65 14.8548 52.56 36.0776 52.41	12.36 0.74 -0.79 16.67 1.04 -1.16
14.8548 52.56 36.0776 52.41	23.97 1.63 -1.87
	% f.t. % f.t.
	0.6 35.8 58.8 49.4
Pryor and Roscoe, 1954	$\begin{bmatrix} 0.6 & 36.4 & 60.2 & 54.2 \\ 21.0 & 44.0 & 63.7 & 59.8 \end{bmatrix}$
% t velocity of sound (m/sec.)	21.0 44.2 66.7 66.3 29.6 48.0 72.3 74.2
0 20 1479	34.4 49.6 79.3 87.0 43.5 55.3 85.1 96.5 49.4 57.8
23.4 25 1582 35 21 1633	47.4 57.8
	Kanonnikoff, 1894
	% d
	20°
	$egin{array}{ccc} 0 & 0.99823 \ 3.11 & 1.03200 \end{array}$
	16.98 .07200 23.25 .12200
·	

004 1905				Pulverma	cher, 1920			
0st, 1895	đ	%	ð	%	n _D	%	n _D	· - · · · · · · ·
	20	0			25°		D	
0 2.0667 2.0513 4.8133 5.0152 5.5369	0.9982 1.0061 .0062 .0172 .0178 .0200	10.3498 10.5385 11.1050 16:3674 19.4793 19.5616	1.0400 .0409 .0430 .0657 .0796	0 1.16 2.32	1.3325 .3354 .3368	4.77 9.60 19.40	1.3406 .3482 .3639	
9.8385 9.8856	.0378	19,5662	.0799	Mc Donal	ld. 1951			
				% (1+1)	n _D		% (1+1)	n _D
Brown, Mori	ris and Millar,	1897				20°		
.%	d %	đ		1.563 5.015 7.003	5 .3400	8	31.034 36.666 40.995	1.38126 .39128 .39918
0 2.4339 2.4935 4.8411	15.5° 0.99905 10.77 1.00373 12.18 .00897 14.67 .01845 19.20	39 .04914 79 .05992 54 .08018		12.929 14.410 20.512 25.197 25.586	9 .35186 0 .35404 2 .36363 7 .3713	0 4 2 5 0	40.995 44.801 50.713 55.537 59.798 65.529	.40640 .41807 .42781 .43674 .44920
5.6435 5.7213 9.4759	.02173 20.06 .02204 23.55 .03762 33.02	29 .09959		3.312 10.180 12.530 25.530	34 7 02 3 .35051	7 1	39.837 40.405 50.992 65.551	1.39633 .39725 .41777 .44842
Pulvermac	her, 1920							
%	d %	đ		0st, 189	95			
	25°			%	(α) _D	%	(a) _D	
1.16 1	.9971 4.77 .0017 9.60 .0054 19.40	$1.0160 \\ .0362 \\ .0777$			20°	0		
% 3	η (water=1) 25°	η (wate	r=1)	2.0667 2.0513 4.3133 5.0152 5.5369	136.96 137.23 136.95 136.89 136.68	10.349 10.538 11.105 16.367 19.479	5 137.19 0 137.07 4 136.66) ,
1.16	1.040 9	1.157 1.60 1.371 1.40 2.025		9.8385 9.8856	137.16 136.71	19.561 19.566	6 137.01	
				Brown, Mo	orris and M	illar, l	897	
Kanonniko	ff, 1894			%	(a) _D	%	(α) _D	
0 8.11 16.93 23.25	ⁿ p 20° 1.332 .345 .359 .379	21 30		2.4339 2.4935 4.8411 5.6435 5.7213 9.4759	138.06 137.96 137.99 137.85 137.94 137.99	10.775 12.189 14.679 19.264 20.004 23.529 33.020	137.94 137.99 138.03 137.80 137.71 137.57	

Water +	Raffinose	(C ₁₈ H ₃₂ ()16)			
Perman	and Price	, 1912				
С	p	С	p			
	70	0				
11.97 18.67 29.78 43.80 53.49	233.2 232.5 230.5 228.6 226.17	68.87 72.06 88.49 95.51 107.01	220.56 218.71 212.79 210.5 200.7			
Water + Dextrin ($C_6H_{10}O_5$)						
Pickerin %	<u> </u>	f.t.	۔ نیم میہ میں اس کی کی کی اس			
32.49 32.40 21.84		-1.17 -1.10 -0.62	82			
		ime (C₂H	₅ ON)			
Somogyi,						
**************************************	capilla 	ry constar	it (a²)			
20)°					
1.043 2.219 4.549 8.842 14.690		4.067 6.531 6.033 5.415 4.870				
mo1%	capi l	lary cons	tant (a²	······································		
1.0 0.5 0.25		5.740 6.350 6.740				
د در در کارو کار کار کار کار کار کار کار کار کار کار	النور على شور سنة الكوافل الموافل الموافل الموافل الموافل الموافل الموافل الموافل الموافل الموافل الموافل الم الموافل الموافل	ن میں میں نمین شرو شور شدر شدر شدر شدر برانجو نمین شدر شرو شرو شدر شدر شدر در نمین شرو شاو نمین شام شدر شدر شدر شد	یں میں ہیں۔ ملک انتخاب خود خود انتخاب ہو میں کیے باقد انتخاب خود خود کا ا	حق حقی حقی شدن الدن الدن الله الله الله الله الله الله الله الل		

```
Water + Acetoxime (C_3H_70N)
 Beckmann,
             b.t.
                                 b.t.
  0.952
2.365
4.458
7.173
          100.235
100.580
101.080
                     9.587
13.04
16.21
                              102.195
102.885
103.470
          101.685
  Water + Benzaldoxime (C_7H_7N0)
 Schoevers,
 L_1 + L_2 + C . . 16° 100% 35°
```

WATER + PHENOL

	I			
LXIV. WATER + PHENOLS .				
Heterogeneous eqilibria	van der Lee	e, 1900		
Eqilibrium L + V	t p	t b	t p	t p
	4.8%	10.1%	18.9%	33.6%
Water + Pheno1 (C_6H_6O)	72.4 263 73.9 280 74.9 291 75.1 294	77.2 321 77.3 323 77.5 325	72.2 260 72.3 262 72.9 269	71.2 251 72.2 261 73.1 272
Keesing, 1909	75.1 294 76.1 306 77.4 323	81.9 388 85 438	73.7 277 75.5 299 75.7 301	74.1 284 74.4 288 75.5 300
mel% crit.t. mol% crit.t.	76.1 306 77.4 323 78.5 338 79.9 357 81.6 382		76.5 312 77.7 328 77.9 331	76 7 315
0.0 364.5 35.0 378.75 6.0 358.75 50.0 394.4 10.0 356.5 100.0 419.2 20.0 363.7	81.6 382 83.0 403 83.8 416 85.4 443 86.6 464 87.0 471		72.2 260 72.3 262 72.9 269 73.7 277 75.5 299 75.7 301 76.5 312 77.7 328 77.9 331 78.9 344 79.6 353 80.5 367 81.6 384 83.0 405 84.4 428	76.9 318 77.0 319 77.7 328 78.7 343 79.4 352 79.9 360 80.9 375 81.6 385
Lehfeldt, 1899			51 , 1	82.6 400 84.2 426 85.0 440
t p t p t p t p	50.9%	77.2%	84%	
67.36% 77.82% 82.70% 90.46%	71.2 251 71.4 253	73.3 253 73.5 254	75.9 212 76.3 215	
50 92.0 70 231.2 40 53.9 25 21.9 65 187.2 75 284.3 50 86.9 40 46.2 75 287.1 80 347.3 60 138.4 50 75.0 85 428.2 85 421.3 65 172.8 60 117.8 90 517.8 90 508.9 70 214.6 65 144.4 75 264.1 70 180.3 80 333.3 75 220.7 85 391.5 90 472.1	71.4 253 72.4 264 73.7 277 74.6 289 76.0 306 77.2 321 78.3 337 79.3 351 81.3 378 81.8 386 82.8 401	74.5 264 75.5 276 76.5 286 777.7 296 78.9 311 79.3 315 80.6 330 81.0 336 81.6 344 83.2 367 84.4 387	76.3 215 77.5 229 77.9 234 79.7 253 81.6 274 82.8 287 85.8 323 89.0 381 89.1 382 89.4 389	
Schukarew, 1910	83.8 417 85.6 448 86.6 462 86.7 468 86.8 470	86.2 419 86.4 422 87.5 444		
% p % p				
69° 0 223.0 40.19 224.2	Schreinem	akers, 1900		
11.90 223.7 48.21 222.0 20.48 224.2 57.14 224.3 30.41 224.0 70.72 224.2	t]	p L ₁	% L ₂	V
Forgus on 1027	29.8 29 38.2 41 42.4 65	8 9.5 2 10	70 67 66	5.96 6.98 6.91
Ferguson, 1927	56.5 12	4 12 6 14.5 0 17	63 60 57	7.28 7.83 8.06
75°	60.1 150 64.4 183	2 22.5	48	8.66
0 289.1 7.19 290.5 23.33 290.2 46.81 290.1 59.76 289.2			والما المواحد الله من من من لين نمو المواجع المواجع	

% L V	p % L V	p	A.N. Camupb	ell and A	JR Campb	ell, 1937	
56.3°	75°		%	,	p		
0 0 2.55 5.58 5.49 7.42 6.57 10.88 7.42 14.56 7.83 69.20 9.88 76.70 9.88 80.34 11.98 88.06 11.98 90° 0 0 2.36 3.64 7.00 7.69 8.29 8.30 9.74 8.96 17.4 10.40	125 0 0 1 125 2.43 3.44 127 4.15 5.21 126.5 7.51 7.41 127 16.82 9.11 126 22.53 9.36 124 24.18 9.85 122 44.44 9.85 118 49.20 9.85 102 60.47 10.43 76.70 12.63 76.70 12.63 525 82.40 12.63 528 91.70 21.37 531 531 530 530	289 295 293 294 294 294 294 294 294 292-293 289 280 259 218	L ₁ 76. 2 80. 2 84. 5 84. 5 90. 6 91. 0 92. 7 92. 9 92. 7 92. 9 95. 0 95. 3 95. 5 96. 1 97. 2	7.7 7.7 8.8	3.5 5.2 6.4 7.3 9.9 10.2 10.1 10.2 10.1 10.2 9.7 9.9		
20.4 10.40 33.6 10.78 35.0 10.78 42.2 10.87	530 530 530				9.0	ندر الدار ال	
42.2 10.87 44.2 10.87 56.3 11.24	530 530 530 530		Brusset	and Gagne	s, 1953		
58.0 11.24	530		t	wt%	v	mo1% L	v
				L	at b.t		
Rhodes, Wells	and Murray, 1925 L V		100 99.90 99.87 99.85 99.80 99.70 99.60	0 4.2 5.95 7.15 8.35 8.70 9.20 12.60	0 6.2 7.65 8.55 8.80 9.00 9.20	0 0.75 1.21 1.46 1.71 1.79 1.90	0 1.25 1.56 1.77 1.81 1.86 1.90
760 mm 2.29 3.87 4.29 5.87 6.19 8.13 10.12 9.49 10.57 9.51 16.61 10.58 26.55 11.14 39.70 11.71 49.90 11.82 71.14 12.74 73.18 12.12	260 mm 4.26 4.36 6.62 5.81 10.05 7.23 17.01 8.14 60.27 8.85 71.56 8.95 80.37 10.09 92.27 15.55 93.13 17.21 95.05 20.28 98.46 58.90		99.80 99.80 100.1 100.3 100.7 101.3 101.8 124 150 160 169 182	12.60 18.88 32.58 55.70 69.99 90.00 99.68 99.92 99.95 100.00	10.99 11.08 11.55 11.77 11.78 16 49 76 85 92.5	2.65 4.26 8.51 19.53 30.00 63.20 94.92 98.50 99.55 99.80 100.00	2.17 2.37 2.44 2.49 2.52 3.80 15.50 41.10 52.20 70.00 100.00
89.20 15.20 89.40 15.45 90.58 15.79 95.50 25.94	40 mm 1.94 1.92 3.02 2.63		Lehfeldt	, 1899		مد حد مد مد مد مد مد مد مد	
97.51 50.14 100.00 100.00	3.74 3.54 32.35 4.30 75.55 4.47				b.t.		
	88.80 8.01 95.42 17.31 97.91 30.95	=======================================	4.8 9.0 13.0 16.4		99.84 99.83 99.83 99.84	1 AZ 9	
			=====================================	هنی دین هنی اتحاد می دین دین احد شده است. حمر بیش احد شدن حد حد احد احد شده احد			
			Lecat,	1949			
F			18		b.t.	ر هندر حدد حين عنبه عندر استواني <u>ن مين عني ح</u> ر عنبو هند حين ستوانين استوانين الدوستان الدوستان	ی دنین میں دنیا جات فیر این دین دنیا جات جات داد داد داد در دنیا جات جات جات فیل میں جات دیار دادی جات داد داد
			9.2 100		99.57 A 182,20	\z	

Hill and Malisoff, 1926	
t % t %	Howell, 1932 t % t %
L ₂ L ₁ L ₂ L ₁ 20 72,16 8,36 65,24 44,09 -	L_1 L_2 L_1 L_2
20 72.16 8.36 65.24 44.09 - 25 71.28 8.66 65.79 - 27.77 30 69.90 9.22 66.01 - 29.13 35 67.63 9.91 65.79 - 30.21 54.83 59.22 - 65.90 - 31.35 57.30 - 14.87 65.84 - 32.23 59.20 55.76 - 65.86 - 32.79 62.55 51.87 - 65.84 34.23 - 62.74 - 19.35	20 8.12 71.8 60 16.1 55.1 30 8.86 69.2 62 17.7 52.8 40 9.84 66.1 64 20.0 49.8 50 12.00 61.6 66 24.6 44.7
02.74 19.05	Megson, 1938
A.N.Campbell and A.J.R.Campbell, 1937	sat.t.
sat.t. % p L_1 L_2 V	25 7.5 70.5 50 12.0 62.5
3.1 6.8 75.5 - 3.8 7.9 6.8 74.4 - 6.7 10.0 7.0 74.3 1.7 - 13.2 7.0 73.6 - 9.4 15.0 7.1 72.7 2.2 - 13.3 21.7 7.3 72.2 - 13.3 21.7 7.3 72.2 - 19.7 26.2 7.5 70.8 4.3 24.2 30.7 7.5 69.5 - 31.7 34.3 7.6 68.3 - 38.1 35.6 7.7 68.9 5.4	Rabinovich, Fedorov and al., 1955 (fig.) t mo1% t mo1% L1 L2 L1 L2
35.6 7.7 68.0 5.4 - 49.3 44.5 8.7 65.0 - 67.9 44.2 9.0 64.0 6.3 - 49.5 55.0 11.3 59.5 7.6 - 55.5 11.5 59.2 - 116.2 59.9 14.0 56.0 7.9 145.1 62.0 15.0 53.5 - 158.5 65.0 18.5 50.0 8.5 65.4 20.0 49.0 - 183.2	15 1.5 34 50 2.5 24 30 1.5 30 60 4 19 40 2 28 66.5 9 9 Alexejew, 1886
% sat.t.	
L ₁ L ₂	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
6.9 75.6 2.6 7.8 71.2 23.9 7.5 70.7 29.6 8.0 69.0 32.5 7.8 66.6 38.8 9.7 64.4 45.7 11.5 62.0 50.0 12.0 60.0 55.5 13.6 57.7 59.8 14.0 55.5 60.5 15.0 54.0 61.8 18.5 50.0 65.0 34.5 34.5 66.8 C.S.T.	Rothmund, 1898 ** sat.t. ** sat.t. 8.26 17.80 35.52 68.95 9.20 32.90 46.79 65.50 10.43 43.75 55.11 61.35 13.93 55.40 62.96 49.90 18.76 62.00 68.91 32.70 33.95 68.67 74.05 12.30

	Hill and Malisoff, 1926
Scarpa, 1904	sat.t. %
% sat.t. % sat.t.	L ₂ L ₁
7.6 30.5 51.05 65.0 10.14 49.0 63.50 53.8 20.13 63.6 69.03 30.7 30.72 65.8 73.80 18.2 40.70 65.5	20 72.16 8.36 25 71.28 8.66 30 69.90 9.22 35 67.63 9.91
	Dolique, 1932
Timmermans, 1907	≸ sat.t. ≸ sat.t.
% sat.t. % sat.t. 9.45 38.0 53.86 60.2 16.16 58.8 64.70 42.7 34.23 65.2 71.40 20.6 36.51 65.3	73.06 13.1 35.87 66.5 72.10 18.8 34.00 66.5 70.85 25.0 34.31 66.5 69.60 30.0 31.54 66.4 67.85 35.3 28.48 66.3 65.90 40.8 25.57 65.8 64.18 45.2 25.00 65.7 61.03 52.3 19.74 63.5 60.50 53.3 18.63 62.8 57.31 57.8 16.32 60.7
Smits and Maarsee, 1912	56.30 58.8 14.66 58.05 54.02 61.1 11.35 48.8
1 10 10 10 10 10 10 10 10 10 10 10 10 10	50.00 63.7 9.56 40.5 45.63 65.3 8.65 33.5
mol % sat.t.	45.29 65.4 8.23 27.0 41.59 65.9 7.91 22.0
0 + 1.74 10 69.5 20 55 30 30 35 12.2	38.84 66.4 7.70 15.0 Smith, 1932
	% sat.t. % sat.t.
Malan 1012	,
Moles, 1913	17.49 55.2 34.39 65.4 21.50 63.1 36.29 65.5
8.54 +30.8 17.09 +60.6 29.71 +66.8 50.00 +63.5	17.49 55.2 34.39 65.4 21.50 63.1 36.29 65.5 26.80 65.2 50.21 62.5 29.27 65.3 55.98 60.4 31.49 65.3 60.02 53.5 33.88 65.4
59.79 +55.7 73,00 +14.6	Duckett and Patterson, 1925
Leone and Angelescu, 1922	C.S.T. 36.1% 66,0°
% sat.t. % sat.t.	Howard and Patterson, 1926
11.15	C.S.T. 36.1% 66.0°

Krishnan, 1935 and 1937	Alexejev	, 1886			
C.S.T. : 34% 69°	%	·	f.t.		
Krichevskii, Khazanova and Linshits, 1954	83.36 92.97 97.18		5.5 19.5 32		
C.S.T. = 67°	Van Byle				
0.000		f.t.	-		
Quantie, 1954 34.0% C.S.T. 65.0°	100.0 95.7 94.5 90.3	38.8 24.2 20.25 11.50	76.6 76.1 6.8 6.0	+1.40 -1.19 -1.12	V+L ₁ +L ₂ +C
van der Lee, 1900	87.4 84.7 82.2 79.7	7.15 4.15 3.65 1.37	4.8 2.9 2.0 0.0	-0.98 -0.68 -0.36	
P C.S.T. P C.S.T. P C.S.T.	78.5	2.12			
22% 34% 38% 1 66.7 1 67.6 1 67.3 30 66.7 30 67.6 60 67.5 60 66.9 60 67.8 90 67.7 90 67.0 90 67.8 120 67.1 105 68.0	Paterno	and Ampo	la, 1897	در الدور مين داخل الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور ا وي الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور الدور	
150 67.2 130 68.1 180 67.3	%	f.t.		<u> </u>	f. t.
47% 49% 55% 1 64.8 1 65.0 1 61.2 60 65.1 30 65.0 30 61.2 90 65.3 60 65.1 60 61.3 120 65.3 90 66.2 90 61.3 150 65.5 180 65.6 Timmermans and Kohnstamm, 1910 C.S.T. = 68.9° dt/dp (1 - 150Kg/cm ₂) = +0.0033	100.0 99.45 99.16 98.89 98.35 98.10 97.67 96.52 96.55 96.31 96.05 95.78 95.52 95.52 94.78 94.39 94.39	40. 37 38. 26 37. 16 35. 16 34. 16 33. 28 32. 26 28. 15 27. 35 26. 65 25. 83 25. 07 24. 39 22. 77 21. 63 20. 33 19. 24		1.71 1.72 1.74 1.74 1.74 1.74 1.71 1.70 1.66 -1.03 -1.24 +0.29 -1.71 -1.18 -1.24 -2.79 -2.87	71.08 68.97 65.96 61.40 58.51 56.57 47.74 43.51 38.58 34.21 28.18 21.90 21.25 13.93 10.30 9.06 9.18 7.11
Timmermans, 1922 P C.S.T. Dt/Dp	92.26 91.19 91.08 89.22 87.61	17.50 14.40 13.63 10.78 8.70 6.02		-1.15 -0.95 -0.95 -0.81 -0.60 -0.49	6.11 5.26 5.07 4.21 3.28 2.31
	85.13 81.29 78.85	3.77 2.49		$-0.36 \\ -0.28$	1.74 1,35
10 66.21 +0.0036 200 66.90 +0.0036	76.75 76.40 75.77	1.82 1.78 1.77		-0.19 -0.09 -0.05	0,93 0,44 0,22
10 66.26 39 200 67.00 39				0.0	0,00
200 67.32 44 600 69.08 44 1000 71.15 52	and the second second second second second second second second second second second second second second seco			عد مد مدينه الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم الدوم ال	
200 66.78 40 600 68.39 40 1000 70.61 55					

Paterno, 1896		Rhodes and	Markley, 19	921	
% f.t. %	f.t.	8	f.t.	% f.t	. E
700 40.18 99.273 37.50 88.764 97.649 31.80 87.654 96.780 29.24 86.115 95.891 27.14 84.043 94.759 23.51 81.293 93.711 21.16 77.315 92.674 19.01 72.272 90.598 15.08	12, 28 10, 89 9, 23 7, 41 5, 51 3, 72 2, 26	100 98 97 95 92 91.84 91.75 91.59	1 40.8 33.0 29.3 23.1 16.2 15.9 15.8 E	82 13.3 80 13.6 78 12.7 76 12.4 74 12.3 73 12.2 65 "	30 - 70 - 10 -
Emery and Cameron, 1900 sat.sol. E: -1.179°		91.44 91.26 91.00 90 89 88 86 84 91	15.9 15.9 (1+1) 15.9 15.75 15.45 15.10 14.40 14.00	25 " 12 " " 5 -0.8 3 - 2 1.5 - 0 0 20 0	35 " -0.60 -0.45 -0.35 -1.2
Rosza, 1911 ### f.t. ###############################	.t.	88 85 82 80 78 77 76	9.3 6.2 4.2 3.1 2.3 2.0 1.8	12 0 10 0 9 1.1 8 0.9 7.5 0.6 7 0 6.5 -1.2	11 11 11 11 11 11 11 11 11 11 11 11 11
100	. 932 .763 .690 .521 .374 .335	75 65 50 25 Bailey,	1.7 1.7 1.7 1.7 1.7 1.7	6 -	-1.1 -1.0
Smits and Maarsee, 1912		0 6.5 7.6	0 -1.2 E +1.7	36.5 65. 75.0 1. 100.0 40.	3 C.S.T. 7 L ₁ +L ₂ +C
mol% f.t. mol	π f.t.	A.N. Cam	pbell and A.	J.R. Campbell	1, 1937
0 - 1.2 50 - 1.0 60 - + 1.74 66 10 - 67 20 - 67 30 - 80 35 12.2 90 40 13.5	15 15,5 16 15.8 18 25 33	76.2 80.2 84.5 84.5	5.3 10.0 10.2		f t 24.9 25.0 25.8 28.9
Moles, 1913		88.0 90.6 91.0 91.5 92.0	20.4 21.4 22.2	95.3 95.5 96.1 97.0 97.2	29 7 30 0 31 5 33 4 35 0
	.19 17.14 80 32.25 00 36.52	0.9 1.8 3.3 4.0 5.0 5.8	f.t. - 0.3 - 0.4 - 0.7 - 1.0 - 1.2 - 1.3	79.8 85.2 87.8	f.t. 4.9 7.2 10.2 16.1 16.7 19.3 21.9

				===	 -	11-	11 1022			
Properties	of phases	3				Howe %	11, 1932	d		
Density						,0	20°	30°.	40°	
Perkin, 3 44 1.07 0 1.0	d 5°		ر, سی سی سے سے سے سے سے میں سی می			0 2 4 6 8 70 75 80 85 90 95	0.9982 1.0001 .0020 .0038 .0055 - 1.0539 .0576 .0615 .0655	0.9957 .9974 .9990 1.0006 .0022 1.0428 .0462 .0496 .0533 .0572 .0617	0.9922 .9938 .9953 .9967 .9981 1.0352 .0382 .0413 .0450 .0488	
8	d 5° 2 0'	o 2:				%	50°	d 60°	75°	جوو چون جين سنده شوه جون جين ڪري جون جي جو دري جو جون جي جون جي جون جي جون جي جون جي جي جون جي جي جي جون جي ج
16.074 1.0	0635 1.05 9991 0.99	594 1.0	 0556			0 2 4 6 8 10 15 20	0.9881 .9894 .9908 .9921 .9934 .9944	0.9832 .9845 .9857 .9858 .9879 .9889 .9913	0.9778 .9788 .9799 .9808 .9819 .9829 - 0.9872 .9917	
		t	d	t	d	30 40 50	~	Ξ	.9962 1,0009	
		9.54			, 04%	60 70	1.0273	$\begin{array}{c} \textbf{1.0138} \\ \textbf{.0191} \end{array}$.0054 .0105	
45.34	9902 9857 9806 9748	38.71 39.28 40.86 45.91 52.99 62.93 80.01	0.9997 .9995 .9987 .9964 .9927 .9870 .9764	50,27 50,90 52,00 56,03 62,25 69,62 79,88	0.9955 .9951 .9946 .9924 .9887 .9841	75 80 85 90 95 100	.0301 .0331 .0367 .0405 .0448 .0499	.0218 .0248 .0280 .0319 .0362 .0413	.0132 .0161 .0193 .0232 .0276 .0325	
24.17		30.93	3%	36.	13%					هنی می <u>ل جی جی دیده خیم خین بینی بینی بینی بینی جی جی خیر خین خین بینی بینی بینی بینی بینی خین مینی بینی بینی ب</u>
65.78 66.84 69.68 73.68	.9925 .9922 .9914 .9894 .9865	66.18 66.75 67.76 70.77 74.79 80.19	0.9951 .9947 .9939 .9916 .9888 .9847	66.17 66.74 67.89 70.77 75.06 79.96	0.9976 .9972 .9963 .9943 .9909	%		Titchen,)
40.46%	*******	45%	•, •	65.0		0 25 50		0.978	0.962 .973	
66.11 0. 66.77 . 67.82 . 70.78	9995 9990 9982	65.46 66.07 67.08 70.28 75.45 80.17	1.0023 .0018 .0012 0.9985 .9953 .9907	43.04 43.51 44.71 49.47 56.61 66.87 80.07	1.0299 .0296 .0286 .0250 .0192 .0108 0.9996	75		0,990 1,003 1,013 1,034	.982 .982 .994 1.013	
99.28										
40.63 1 59.29 60.48 70.61 80.62 (.0580 .0497 .0400 .0321).9996									

Krichevskii, Khazanova and Linshits, 1955	Goard and Pascal, 1925
t d t d	t d
14.8%	$egin{array}{cccc} \mathbf{t} & \mathbf{d} & & \\ \mathbf{L_2} & \mathbf{L_1} & & \\ & & & \\ \end{array}$
55.11 0.99423 57.26 0.99295 55.29 .99413 57.35 .99290 55.58 .99366 57.82 .99262 56.03 .99368 58.04 .99249 56.10 .99365 58.25 .99235 56.44 .99344 58.70 .99209 56.78 .99324 59.21 .99178 56.90 .99317 59.48 .99162 57.01 .99311 59.71 .99148	0 1.9685 1.0085 17 .0537 .0060 30 .0442 .0025 40 .0332 0.9990
15.35%	Hill and Malisoff, 1926
56.26 0.99486 58.03 0.99380 56.42 .99476 58.55 .99346	t % d % d
56.42 .99476 58.55 .99346 56.71 .99459 58.64 .99343 56.91 .99446 58.99 .99318 56.97 .99444 59.59 .99283 57.21 .99429 59.73 .99276 57.46 .99414 60.16 .99247 57.71 .99398 60.61 .99220 57.94 .99384	L ₂ L ₁ 20 72.16 1.0541 8.36 1.0018 25 71.28 1.0469 8.66 1.0045 9 30 69.90 1.0429 9.22 1.0039 35 67.63 1.0405 9.91 0.9974
62 15 0 00380 64 58 0 00334	
62.73 .99351 64.64 .99219 63.13 .99325 64.92 .99202 63.32 .99310 65.29 .99176	Kremann, Griengl and Schreiner, 1933
63.32 .99310 65.29 .99176 63.74 .99282 65.70 .99148 63.94 .99269 65.77 .99144	% d % d
62.73	50°
34.80%	L ₂ L ₁
64.07 0.99818 66.61 0.99629 64.62 .99776 66.84 .99611 65.24 .99728 67.42 .99569 65.54 .99706 67.94 .99531 65.83 .99684 68.39 .99497 66.40 .99644	30 1.0284 0 0.9883 45 .0284 10 .9977 55 .0284 12 .9983 60 .0284 15 .9983 62 .0284 30 .9983 63 .0291 45 .9983 64 .0296 65 .0303 66 .0310
49,20%	68 .0324
62.71 1.00566 64.09 1.00456 62.78 .00561 64.15 .00451 63.10 .00534 64.47 .00427 63.29 .00522 64.88 .00394 63.34 .00516 65.10 .00377 63.70 .00488 65.34 .00359 63.73 .00486 65.85 .00319	70 .0336 80 .0401 90 .0465 100 .0530
63.73 .00486 65.85 .00319 63.94 .00468 66.32 .00283 55.15%	Howell, 1932
58.59 1.01206 60.28 1.01072 58.82 .01188 60.39 .01061 59.20 .01157 60.47 .01056 59.38 .01143 60.70 .01037 59.62 .01125 60.98 .01017 59.64 .01123 61.24 .00997 59.70 .01118 61.25 .00996 59.79 .01111 61.61 .00968 59.81 .01109 61.79 .00055	t d (sat.sol.) $\begin{array}{ccc} L_1 & L_2 \end{array}$
59.64 .01123 61.24 .00997 59.70 .01118 61.25 .00996 59.79 .01111 61.61 .00968 59.81 .01109 61.79 .00955 59.89 .01103 61.86 .00950 60.14 .01086 61.88 .00949 60.22 .01079 61.92 .00944	20 1.0056 1.0515 30 1.0028 .0423 40 0.9993 .0328 50 .9955 .0226 60 .9918 .0114 62 .9914 .0087 64 .9912 .0056 66 .9920 .0015
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

Viscosia	d a¢-							·			
viscosity ar	d surface te	nsion			Scar	pa, 19	04				
	004				t		η	t	η	t	η
Scarpa, 1	.904					0%		7.		10.	14%
0 7.6 4 10.14	7.5° 70° 120 405 177 462 195 478 129 602 120 778	383 431 448	80° 362 403 418 512 630	85° 342 - 476 582	90.6 85.5 77.3 73.3 67.6 65.8 30.2	3: 34: 39: 41: 42: 80:	20 41 67 90 17 28 01	79.44 69.71 60.56 49.85 40.33 34.23 31.74	406 465 528 626 747 854 893	81,19 69,68 59,38 51,65	413 478 556 640
40.70 9	918 100 1040	813	736	672	15	20.13%		30	.72%	40,	70%
63.50 11 69.03 12 73.80 12 89.85 16	103 202 1146 270 1203 564 1578	1010 1040 1102 1410	848 926 964 1005 1300 1571	892 - 1192 1416	90.1 77.1 66.4	6 44 6 55 2 65 51.05%	40 34 39	89.67 75.20 70.00 66.95	543 688 773 833	87.42 75.68 67.25	645 798 983
					80.6		39		.50%		03%
Friedland	ler, 1901				76.2 71.1 69.9	2 9 9 10	13 22	81.59 71.57 61.78 56.49	894 1073 1303 1468	87.65 75.38 65.99	854 1035 1 2 38
t	^η H ₂ 0±1 ^t	η Η ₀ 0=	t	^η H ₂ 0=1		73.80%		89	. 85%	100%	
0%		9.54%	12	.04%	80.1 70.0	0 10	03 0 2	87.93 73.98	1132 1436	90.00	1255 1571
45.34 55.23 65,28	8015 38.7 6656 39.2 5645 40.8 4852 45.9 4239 52.9 3837 62.9 80.0	1 0.910 8 .899 6 .866 1 .789 9 .692 3 .588	50,27 50,90 52,00 56,03 62,25 69,62	.000	59.6 51.3 39.7 29.6 22.0	8 120 3 141 9 178 3 240 9 318 0 410	33	87.93 73.98 68.04 67.46	1632 1668	80.00 70.26 66.36 60.25 55.45	1371 1972 2164 2537 2906
24.1	80.0 7%	1 .460 30.93%	79.88 36	.481 .13%		.11 10	.22				
(5 22 O	.820 66.1 .806 66.7 .786 67.7 .735 70.7 .684 74.7 .611 80.1	8 1.024 5 0.971 6 .928 7 .849 9 .779	66.17 66.74 67.89 70.77 75.06 79.96	1.159 .079 .015 0.928	# Howe	20°	30°	40°	η 50°	60°	70°
73.68 80.16 40.46		9 .779 9 .700 45%		0.928 .843 .767 5.04%	0 2 4 6	1006 1056 1107 1160	799.8 834.2 870.3 907.1 948.5	656.3 681.6 708.5	569.6 589.8	485.0 500.0	407.5 419.0 431.0 445.0
66.77 . 67.82 . 70.78 0.	159 65. 119 66. 076 67. 989 70. 905 75. 819 80.	46 1.182 97 .157 98 .124 28 .039 45 0.934 17 0.861	43.04 43.51 44.71 49.47 56.61 66.87 80.07	2.222 .195 .132 1.898 .613 .305	8 10 15 20 30 40	1215	948.5	737.0 766.4 - - - -	634.0	536.0	450.0 477.1 595.4 759.0
99.2			80.07	.029	50 60	-	. <u>-</u>	- -		1293 1413	892.0 972.9 1053 1157
59.29 3 60.48 2 70.61 2	. 319 . 839 . 865 . 221 . 788				70 75 80 85 90 95 100	4372 4731 5273 6146	2972 3153 3393 3742 4288 5284	2253 2383 2553 2792 3161 3770	1775 1858 1981 2164 2420 2820 3491	1413 1485 1591 1725 1910 2180 2614	1157 1215 1298 1405 1547 1735 2028
N.B. H ₂ O at	: 2 5° = 1										

T	Kremann, (Friengl and Sc	hreiner, 1933		Whatmo	ugh, 1902			
L_t	%	η %	n		t	ø	t	σ	
20		50°				L ₁		-2	
1	10 20 30 37	638 50 860 60 1394 70 2263 80	1669 1615 1725 2330	-1+L ₂	34.9 45.1 55.1 65.0 70.8	40.97 40.16 39.33 38.84	40.2 49.2 60.0 71.0	41.63 40.71 40.18 39.47 38.84	
1.			سو خلو لين سن حقد خلد هيد هيم شيم بيم بيم شير يون		24.70 30.20	42.56 42.07	30.3	41.66	
Schtkarew, 1910 Schtkarew, 1910 Schtkarew, 1910	30 45	L ₂ 50 1552 0 1552 10	° L ₁ 548 587		H 50.00	40.44	41.2 50.5	40.76 40.21 39.51	1
65 1587 66 1594 68 1605 70 1637 80 1873 90 2334 100 3335 A.N.Campbell and A.J.R.Campbell, 1937	60 62 63	1581 30 1581 45	638 638		Schükare	w, 1910			**************************************
68 1605 70 1637 80 1873 90 2334 100 3335 A.N.Campbell and A.J.R.Campbell, 1937 *** t	65	1587			9.E	σ	K		ď
Morgan and Egiott, 1916	68 70 80 90	1605 1637 1873 2334			30.35 55.70	75.67	81		75.18 76.61 64.38
Morgan and Egiott, 1916			ے خبر اسے اسے اس مال خوا اس کا اس اس اس اس اس اس اس اس اس اس اس اس اس	,					
Morgan and Egiott, 1916	1 N.C. 1	• • • • • • • • • • • • • • • • • • • •							
0.8 19.2 1.01 53.0 70.0 1.51		II and A.J.R.C		. س. س. س. س. س. س. س. س. س. س. س. س. س.	Morgan a	nd Egloff, 19	16		
3.9 19.2 .04 58.0 70.0 .77 .73 .73 .72 .73 .73 .72 .74 .74 .70 .75 .77 .75 .77	% t 	η(water=1)	"(water=1)	t		σ		
65 64.88 61.82 59.89 58.16 54.78 3.48 4.53 8 8.74 58.6 65.45 8 Dervichian and Titchen, 1950 (fig.) 30 46.11 43.14 40 45.91 42.95 37.09 45 45.85 42.82 36.89 50 45.76 42.67 36.72 - 36.23 55 45.65 42.54 36.53 - 35.93 60 45.57 42.36 36.35 35.25 35.55 25 710 570 470 50 1000 800 660 75 1270 1000 840 100 2120 1550 1300 0 70.40 74.00 76.60 76.00 100 76.60 70.40 74.00 76.60	3.9 19. 7.3 19. 9.2 52. 16.0 70. 25.0 70. 33.0 70.	2 .04 2 .14 0 .13 0 .16 0 .12 0 .25	58.0 70.0 64.4 70.0 69.5 51.0 72.8 51.0 82.7 20.0	.57 .71 .72 2.97 4.51	20 30 35 40 45 50	75.87 68.2 72.69 66.1 71.03 65.1 70.19 64.7 69.33 64.3 68.47 63.2 67.59 63.2 66.69 62.8	3 64.77 3 63.23 9 62.51 7 62.14 0 61.83 9 61.40 7 60.99 0 60.64	62.21 61.02 60.27 60.08 59.74 59.44 59.15 58.80	- 56.23 56.08 55.89 55.68 55.44 55.25
35 46.00 43.07 37.22 40 45.91 42.95 37.09 45 48.85 42.82 36.89 50 45.76 42.67 36.72 - 36.23 55 45.65 42.54 36.53 - 35.93 50 425 365 320 60 45.57 42.36 36.35 35.25 35.55 25 710 570 470 60 45.57 42.36 36.35 35.25 35.55 25 1270 1000 840 75 1270 1000 840 70 100 2120 1550 1300 70 1000 840 70 100 12120 1550 1300 70 1000 840 70 100 12120 120 120 120 120 120 120 120		,		ی این این این این این این این این این ای	65	64.88 61.8 3.48 % 4.53	2 59.89 % 8.74 %	58,16	54.78
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$, 1950 (fig.)		35	46.00 43.0	7 37.22 5 37.09	-	-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	'		94.00		45 50	45.85 42.8 45.76 42.6	2 36.89 7 36.72	-	36.23
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 25 50 75 10	425 365 710 570 000 800 270 1000	320 470 660 840		55 60 65	45.65 42.5 45.57 42.3 45.48 42.2 70.40 %	4 36.53 6 36.35 8 36.11 74.00 %	35.25 34.96	35.93 35.55 35.23
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100 ,2				20			-	39.59
					35 40 45 50 55 60	37.72 37.33 36.96 36.53 36.15	37.83 37.41 36.99 36.59 36.19 35.77	37.89 37.50 37.08 36.65 36.24 35.83	38.02 37.49 36.96 36.44 35.91 35.38

				A.N.Camr	nhell and &	.J.R.Campbel	1 1037
Morgan	and Evans, 1917		سند حيد جيد جيد جيد جيد جيد ديد - اندر جيد جيد جيد جيد جي حيد جي حيد				
t		-	σσ	%	t .	σ	. 1 1 . 1
	L ₂	L				water=1	phenol=1
15 20 25 30 35 40 45 50 55 60	72.24 39.003 71.38 38.580 69.95 38.172 68.28 37.761 66.81 37.322 65.02 36.945 62.13 36.545 60.18 36.107 56.10 35.703	8.110 8.71 8.92 9.34 9.78 10.62 12.08 13.88	39, 201 38, 851 38, 485 38, 104 37, 711 37, 330 36, 949 36, 510 36, 187	0.8 3.9 7.3 9.3 16.0 33.5 46.0 53.0 58.0 64.4 72.8 87.7	20.6 18.9 20.9 54.9 73.1 70.7 75.5 74.0 63.0 56.0 64.0 42.0 51.0	0.82 .608 .545 .56 .59 .555 .53 .494 .53 .55 .55	1.66 .22 .11 .05 .11 .05 .01 .08 .03 .02 .04 .04
tt	σ	t		89.6 98.6	49.0 49.0	.54 .54	.02 .04
25	20.07	•	27 40	/0.0	17.0	,51	.01
25 30 35	39.07 38.54 38.01	40 45	37.49 36.95				
25	4.68 39.16	% 35	38.15	Anto	noff, Hecht	and Chanin,	, 1941
30	38.65	45	37.13	21		facial tens	ion with time
	1.77 %		3.76 %		ge of inter e authors)		
45	37.03	45	37.16	:======	_ 444,101 - /	بر خود مدد خود شد. شر شده شد مدد مدد سد مدد بد شد شد شد شد شر شر شد شد شد شد شد شد شد	. حدد الحيد الذي الديد الديد الدين الذي الذي الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين . حدد الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الد
30	38,51	45	37.14				
30	23,4 38,29	√% 40	27 FO	Krichev	skii, Khaza	nova and Li	nshits, 1954
35	37.89	45	37.50 37.08	*		diffusi	n
30	37.1		27 13	L2	L ₁	(mg/1	n)
30 35	38.22 37.83 37.1	40 45 6 %	37.4 1 36.99	11.35	0.0	0.097	ه سه می شده شده شد شده می این شده شده سه می این شده می شده شده شده می این می این این این این این این این این ا
30 35	38.09 37.72	40 45	37.33 36.96	23.9 35.5 41.8	10.7 24.5 31.1	.061 .007 .000	
Goard :	and Pascal, 1925						
t	ø						
,	L ₁ L ₂						
0	41.81 41.48	مر ضو ن _{خب} ر م _ن و می _ن و مت سه مدر شد					
17 30 40	40.45 40.19 39.50 39.30 38.91 38.75						
=======	د التي الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين ا و التي الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين ا		سیان میں دائیں جات اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان اور ان]			
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Optical	and elec	trical pro	perties			Howell:	and Handi	ford, 1933			
A.N. Cam	pbell and	A.J.R. Car	mpbell, 19	37		%		20°	ж 30		40°
 %		n _H (α	اسه خو جد حد جد انتها سی می می ج <u>د بین</u> .		0		0.00508	0.00	628	0.00752
0.905 3.85 6.95 75.2 82.0 90.0 0.905 3.85 6.95 9.65 68.5 75.2 82.0 90.0 97.5 0.905 3.85 6.95 91.68 92.50 92.50 94.10 94.30 94.65 51.5 68.5 75.2 82.0 90.0 97.5	7° 1.336 .3396 1.4895 .5090 35° 1.3321 .3376 .3456	22.5° 1.3328 .3389 .3466 1.4843 .5051 .5235 45° 1.3376 .3447 .3510 -4545 .4679 .4815 .4977 .5149 .5323 65° 1.3274 .3328 .3400 .3464 .3570 .3725 -4493 .4493 .4493 .4495 .4495 .4910 .5084 .5245		30° 1.33215 .3387 .3456 1.4814 .5024 .5212		2.00 3.97 6.01 8.01 66.15 69.02 70.11 75.08 80.30 80.80 84.84 88.63 94.75 0 2.00 3.97 6.01 8.01 10.08 15.36 20.01 30.19 39.88 50.14 50.18 60.06 60.23 65.16 66.15 69.02 70.11 75.08 80.30 80.80 84.84 88.63 94.75 100.00		.01879 .02427 .02731 .02929 	0.00 .00 .00 .00 .00 .00 .00 .00 .00 .0	492 232 2335 893 - 472 472 2213 12163 1163 1163 1164 165 165 174 165 167 167 168 174 169 174 169 174 169 174 174 174 174 174 174 174 174 174 174	.03169 .04133 .04655 .04978 .00790 .00657 .00615 .00422 .00285 .00274 .00211 .00162 .000995 .070° .0119 .0552 .0725 .0816 .0873 .0902 .0923 .0879 .0745 .0555 .0363 .0363 .0217 .0215 .0154 .0118 .01091 .00749 .00508 .00489 .00489 .00377 .00292 .00176 .000647
=======		د امام الله الله على الله الله الله الله الله الله الله ال			=====	Pestem	er and P	latten, 193	3		
Port:	n 1904					%	н	. ند م _ه س _و سه مدرس موسوس م	 %		
%	n, 1896		(ά) magn.				L ₁	L ₂ 50°		L ₁	L ₂
		15.5°	max11.			0	0.159	-	55	_	0.266
16.00		د حو شد شد بند بند شد سد شد شد شد ا و شد شد هم جو بن سد شد شد شد شد	2.2394 2.4688	-2222222	======	5 12 30 45	.419 .836 1.107 2.065	0.463 0.200	62 70 90	-	.408 .366 .177

	Heat constants
Trifonov, Ust-kachkintsev and Teitelbaum, 1947	Alexeev, 1886
mol% ×	% U
25° 75° 90° 0.3 0.102 0.310 0.385 1.5 .122 .388 .526 3.0270 .366 5.0211 .284	100 0.523 74.07 0.6735 6.30 1.0085
10.0 - 163 .224 20.0 - 117 .168 30.0092 .136 35.0 0.036 .078 .118	Ferguson, 1927
40.0 .029 .068 .102	% U % U
50.0 .022 .052 .079 60.0 .016 .036 .055 70.0 .011 .026 .039 80.0017 .025 100.0004	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Howell and Jackson, 1934	
wt% mol% ε wt% mol% ε	Amirkhanov, Gurvich and Matisen, 1955 (fig.)
70°	t U t U
40.00 11.32 27.67 75.00 36.49 18.2 44.91 13.50 26.72 80.01 43.39 16.3 50.01 16.08 25.13 85.00 52.04 14.4 55.00 18.97 23.67 89.62 62.31 12.8 59.99 22.31 22.64 94.98 78.37 10.9 65.00 26.23 21.37 100.00 100.00 9.6 69.99 30.87 19.94	1
Krischnan, 1935 and 1937	% Q mix 96.9 -40
	80.8 48.15 -408.8
Molecular clustering	16.4 -97
t p _{h*} p _v p _u	Ferguson and Hope, 1924
69 12 0.07 0.62 69.5 16 .12 .62 71 26 .19 .70 74 31 .23 .75 77 39 .27 .77	61% Q mix (maximum) _5.0 cal/gr.
83 41 .43 1.1 87.5 51 .60 1.4 90 66 .70 1.5	Ferguson, 1927 % Q mix % Q mix cal/gr. cal/gr.
95 77 1.00 2.2 *p _h - horizontal polarisation	710
p _v - vertical polarisation	9.73 .794 52.70 .706
P _u - unpolarised light	10.23

Water + o-Cresol (C ₇ H ₈ O)	Sidgwick, Spurrell and Davies, 1915
	% sat.t. % sat.t.
Brusset and Gaynes, 1953 b.t. wt% mo1% L V L V 100 0 0 0 0 0 0 99.8 0.50 1.90 0.1 0.35 99.7 0.67 2.75 0.2 0.60 99.4 3.99 10.90 0.69 2.02 99.07 4.99 11.97 0.87 2.22 99.07 11.97 11.97 2.12 2.22 L ₁ +L ₂ +V 99.07 80.08 11.97 40.02 2.22 102.5 87.50 17.50 65.22 3.41 113.0 97.50 35.90 86.80 8.52 140.0 99.85 75.90 99.10 34.30 170.5 99.93 89.50 99.62 58.20 191.0 100.00 100.00 100.00	3.01 35.3 82.37 87.5 3.22 50.2 84.58 56.6 3.47 61.7 85.69 33.6 L ₁ +L ₂ 3.75 70.6 86.14 25.6 4.10 77.7 87.52 8.3 f.t. 4.51 84.6 88.68 9.1 " 6.52 130.6 89.89 10.2 " 10.46 148.7 90.85 11.1 " 19.36 158.7 92.62 12.9 " 30.06 161.7 94.08 15.3 " 40.89 162.8 97.46 22.3 " 50.14 160.0 99.01 26.9 " 59.80 157.7 100.00 29.9 " 69.30 145.7 76.14 129.6 C.S.T. = 162.8
Michels and ten Haaf, 1926	Water + m_Cresol (C ₇ H ₈ O)
% sat.t. % sat.t.	Sidgwick, Spurrell and Davies, 1915
2.9 46.2 45.9 168.3 4.0 86.7 50.4 167.9 4.5 104.5 56.5 163.7 6.9 121.0 64.7 160.1 7.0 123.0 74.8 139.2 8.7 134.0 75.9 135.4 16.4 157.9 82.9 92.8 17.5 159.6 84.1 87.3 36.4 167.3 86.2 50.5 42.6 168.9	% sat.t. % sat.t. 2.24 -0.2 61.27 140.5 2.36 +24.7 70.32 124.8 2.66 47.0 75.40 109.3 L ₁ +L ₂ 3.03 61.9 80.46 82.8 3.54 74.5 82.60 67.7 4.24 87.5 83.70 57.1 6.59 116.9 84.79 46.5 11.99 139.4 85.85 34.5 32.40 146.9 87.05 20.3 35.07 147.0 87.58 13.2 41.06 146.6
von Szelenyi, 1929 % sat.t. % sat.t.	Michals and ten Haaf 1024
	Michels and tem Haaf, 1926 % sat.t. % sat.t.
4.90 106.4 19.81 164.6 5.00 110.0 29.65 168.9 5.50 120.0 35.51 166.25 6.10 130.0 48.58 169.15 7.30 140.0 58.50 160.0 7.70 141.75 60.33 164.85 9.35 150.0 67.70 152.3 10.93 155.35 75.74 130.25 19.5 160.0 C.S.T. 169.7 39.5%	2.7 50.8 62.2 137.7 3.6 78.7 65.9 133.2 4.5 92.2 70.6 124.4 10.8 121.7 73.1 120.0 14.0 140.4 76.7 103.0 23.2 147.5 79.7 90.2 29.7 148.7 80.0 85.2 42.9 148.7 80.7 82.6 48.9 147.6 82.6 67.9 58.0 141.2 85.9 36.2 59.3 141.9

Water + p-Cresol (C ₇ H ₈ O)						
·	Water + Resorcinol ($C_6H_6O_2$)					
Michels and ten Haaf, 1926	Speranski, 1909 and 1910					
% sat.t. % sat.t.	t p t p					
2.21 29 - 30 43.7 140.7 3.74 82.1 50.2 139.5 5.40 105.0 56.9 136.6 6.90 118.5 66.6 124.4 9.20 127.9 71.3 110.8 16.40 138.0 79.5 71.0 32.10 142.6 81.3 59.5 32.30 142.5 83.7 37.1	\$at.sol. 20.80 15.97 31.17 27.54 23.17 18.17 35.12 33.19 25.10 20.16 38.10 38.20 28.16 23.62 40.33 42.18					
	Boswell and Cantelo, 1922					
Sidgwick, Spurrell and Davies, 1915	N p					
% sat.t. % sat.t.	23°					
2.24 40.2 71.91 111.6 2.49 52.6 79.40 77.9 L ₁ + L ₂ 2.80 63.5 83.61 37.4 3.19 73.5 84.48 27.5 3.72 84.0 85.28 17.2 4.06 88.8 86.86 8.7 4.47 94.0 87.90 9.2	5.000 19.39 4.000 19.81 3.000 20.31 2.000 20.80					
7.42 124.5 90.09 10.8	Shakparonov and Martinova, 1953					
20.07 141.2 96.01 20.3 30.13 143.5 97.27 24.0 40.08 143.4 98.32 27.5 50.63 141.5 99.06 29.9 60.61 134.8 100.00 33.8	mo1% d vapour p mo1% d vapour p mg/cc ³ mg/cc ³					
C.S.T. = 143.5	20° 25°					
20 % and 86 % 8.7°	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$					
Perkin, 1896						
% d 15° 20° 25°	Speyers, 1902					
0 0.9991 0.9982 0.9971	mol% f.t. mol% f.t.					
14.28 1.0381 1.0344 1.0306 100 1.0312 1.0277 1.0239 (α)mol = 12.768 15° 14.28 %	9.78 0.0 36.74 55.8 13.27 10.0 50.91 79.8 23.67 34.6					
	Mortimer, 1923					
	mol% f.t. mol% f.t.					
	9.8 0 58.8 80 16.6 20 83.3 100 26.8 40 100.0 110.2 40.4 60					

Walker, Collett and Lazzell, 1931	Harkins and Grafton, 1925
mol% f.t. mol% f.t.	N d N d
100.00 109.4 37.80 50.4 72.15 88.5 36.76 49.3 63.28 80.5 33.18 44.5 53.95 70.7 26.35 33.61 48.62 64.4 Cohen-Adad, 1949	20° 0.03
% f.t. % f.t.	
10.00 -1.48 35.40 -5.32 E 20.00 -2.95 37.00 -5.78 30.00 -4.48 37.00 -3.62 100.00 +109.50	Gibson, 1935 % d % d
	25°
Perkin, 1896 mol% d 15° 25°	0.00 0.99707 29.97 1.06022 5.18 1.00731 40.00 .08334 10.92 .01901 50.34 .10835 20.00 .03823
0.00 0.9991 0.9971	W 11
0.00 0.9991 0.9971 6.64 1.0653 1.0619 22.22 1.1038 1.0992	Harkins and Grafton, 1925 N o N o
	20°
Traube, 1896 % d % d 15° 0.6342 1.00047 6.237 1.01210 1.873 .00302 15.147 .03138 3.216 .00589 23.036 .04892	0.03 72.15 0.75 64.36 .05 71.39 1.0 63.41 .10 70.62 1.5 61.14 .15 69.62 2.0 60.46 .20 68.84 3.0 58.63 .30 67.74 4.0 58.16 .40 66.80 5.0 57.57 .50 66.24 6.0 57.06
Speyers, 1902	Gibson, 1935 π % π
t d t d	π
sat.sol. 0.0 1.101 45.2 1.149 14.4 .124 63.4 .152 31.1 .144 85.4 .141	0.00 39.35 29.97 35.14 5.18 38.63 40.00 33.95 10.92 37.79 50.34 32.69 20.00 36.49
	Perkin, 1896
	mol% t (\alpha) magn.
	6.64 15 1.3729
	22.22 16 1.8621

Water + Hydroquinone ($C_6H_6O_2$)	Perkin, 1896
Walker, Collett and Lazzell, 1931	% (α)magn.
mol% f.t. mol% f.t.	0 15° 1 20 1.2691
10.25 75.3 49.11 131.7	
13.55 81.9 52.95 136.0 35.29 114.6 60.35 141.8	Water + Direct Lal (C.H.O.)
39,24 120,3 65,18 147,2 100,00 172,9	Water + Pyrogallol (C ₆ H ₆ O ₅)
	Boswell and Cantelo, 1922
Western Demonstrated (G N o)	N p 3,500 23° 19,75
Water + Pyrocatechol ($C_6H_6O_2$)	3,000 19,93 2,000 20,44
Walker, Collett and Lazzell, 1931	
mol % f.t. mol % f.t.	T
23.01 41.2 47.11 66.2 37.10 56.7 100.00 104.5	Traube, 1896 % d % d
37.10 56.7 100.00 104.5 37.23 57.1	% d % d
Traube, 1896	0 0.99913 5.610 1.01713 1.051 1.00259 10.453 .03225 3.013 1.00881 19.316 .06240
8 d 8 d	
15°	
0 0.99913 4.663 1.00960 0.8718 1.00115 17.181 1.03870 1.863 1.00330 24.183 1.05515	Harkins and Grafton, 1925
1,000 1,0030 24,100 1,00010	N d N d
Perkin, 1896	0.1 1.0022 0.75 1.0252
% d	.2 .0058 1.00 .0359 .3 .0100 1.50 .0546
15° 25°	.2 .0058 1.00 .0359 .3 .0100 1.50 .0546 .5 .0177 2.00 .0733 .6 .0208
0 0.9991 0.9971	
20 1,0450 1,0418	N o N o
	- '
Harkins and Grafton, 19 2 5	.2 70.38 1.00 60.00 .3 68.24 1.50 56.10 .5 65.74 2.00 53.80
N d N d	0.1 71.71 0.75 62.37 .2 70.38 1.00 60.00 .3 68.24 1.50 56.10 .5 65.74 2.00 53.80 .6 64.87
20°	
0.03 0.9986 0.50 1.0101 .05 0.9995 0.60 .0127	
.10 1.0007 0.75 .0163 .20 .0031 1.0 .0222	Perkin, 1896
.30 .0053 2.0 .0454 .40 .0078	% d
N g N g	15° 25°
0.03 72.08 0.50 60.78	0 0.9991 0.9971 31.053 1.1038 1.0992
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	س الله الله الله الله الله الله الله الل
.20 66.83 1.0 55.74 .30 66.44 2.0 51.56	% (α) m agn.
.40 62.42	0 16° 1 31.053 1.38 2 4

Water + o-Hydroxybenzaldehyde (C ₇ H ₆ O ₂) Sidgwick and Allott, 1923	Water + 1-2-5-Hydroxytolualdehyde ($C_8H_8O_2$)
% sat.t. % sat.t.	Sidgwick and Allott, 1923
1.68 85.8 90.56 146.3	% sat.t.
3.59 136.5 93.20 117.3 5.34 154.0 97.13 67.4	2.52 99.1 5.47 156.5
Water + m_Hydroxybenzaldehyde ($C_7H_6O_2$)	92.73 137.1 96.09 87.7
Sidgwick and Allott, 1923	
\$ f.t. % sat.t.	Water + 1,4,6-Hydroxytolualdehyde (C ₈ H ₈ O ₂)
2.73 43.0 19.2 63.5 9.38 57.8 29.2 66.0 11.00 58.9 31.9 66.1 65.10 60.4 40.1 66.2	Sidgwick and Allott, 1923
83.30 71.2 43.94 65.6	% f.t. % sat.t.
89.00 81.1 53.9 62.4 100.00 100.0 L ₁ +L ₂ + Aldehyde (fig.) 60% 60°	5.78 56.8 7.95 85.8 51.0 69.2 14.3 116.3
L ₁ +L ₂ + Ice 12%	59.5 69.4 34.0 125.0 69.5 69.9 44.6 124.5
C.S.T. 66.1°	82.7 75.9 48.5 121.1 100.0 108.9 50.3 78.8
	L ₁ +L ₂ + Aldehyde 50.6% 69.1°
Water + p-Hydroxybenzaldehyde ($C_7H_6O_2$)	L ₁ +L ₂ + Ice 6.9% 69.1° C.S.T. = 125°
Sidgwick and Allott, 1923	Water + 1,4,5-Hydroxytolualdehyde ($C_8H_8O_2$)
% f.t. % Sat.t.	"acci 11,4,5 hydroxytoliaidenyde (C ₈ H ₈ U ₂)
1.33 30.5 13.2 52.8 4.34 52.0 20.7 60.5 8.32 59.2 26.6 62.4 13.2 61.9 49.8 61.8	Sidgwick and Allott, 1923
1 20.7 62.6	# f.t. % sat.t.
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
88.8 83.0 100.0 116.0	35.4 136.8 52.5 127.0 L ₁ +L ₂ + Ice 13.0% 79.5°
100,0	56.0 87.2 59.9 79.6 C.S.T. = 136.8°
	73,3 80.3 86.8 91.2
	100.0 117.4
	ll l

Water + Thymol (C ₁₀ H ₁₄ O)	Water + o-Chlorphenol (C ₆ H ₅ OCl)
•	Sidgwick and Turner, 1922
Wilcox and Bailey, 1929	% f.t. % sat.t.
% f.t. % f.t. 0.0 0.0 70.2-20.1 270.0 C.S.T. 0.04 -0.05 E 95.4 40.0 L ₁ + L ₂ + C 0.10 +40.0 100.0 50.0	89.25 -4.0 33.00 173.0 89.62 -5.0 45.04 172.9
Water + α-Naphthol(C ₁₀ H ₈ O)	90.87 -8.0 54.95 170.1 92.20 -8.2 60.72 166.2 93.93 -6.0 70.62 156.6 96.79 -1.5 82.82 118.9 98.39 +2.0 85.90 +91.5 100.00 +7.0 C.S.T.: 129.0° L ₁ +L ₂ +Phenol: 86.5% -0.3°
Mukhin and Chelenko, 1931	
% f.t. sat.t. % f.t. sat.t.	Water + m_Chlorphenol (C ₆ H ₅ OCl)
0.38 54.0 - 45.03 73.0 209.3 0.51 61.0 - 48.35 73.0 209.0 1.03 65.5 - 54.55 73.0 206.7 1.20 68.0 - 59.20 72.7 205.0 1.71 70.0 110.0 64.01 73.0 200.0	Sidgwick and Turner, 1922
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	% f.t. % sat.t.
1.71 70.0 110.0 64.01 73.0 200.0 3.21 71.0 130.0 67.90 73.0 191.0 5.50 72.0 165.5 74.95 73.0 175.3 7.05 72.0 175.0 80.03 73.0 160.7 10.01 72.5 188.0 84.51 73.5 140.5 14.53 73.0 198.3 88.59 75.0 80.0 19.98 72.5 204.0 94.00 79.0 24.02 73.0 207.0 97.41 88.0 -31.10 73.3 209.7 100.00 94.0 -36.52 73.0 210.5	0.75
	C.S.T. = 130.8° L ₁ +L ₂ +Ice : 83.4% -0.4°
Water + β -Naphthol (C_{1} $_{0}$ H_{8} $_{0}$)	*-metastable L ₁ +L ₂ +Phenol: 82.3% +3.2°
Mukhin and Chelenko, 1931	Water + p_Chlorphenol (C_6H_50C1)
\$ f.t. sat.t. \$ f.t. sat.t.	Sidgwick and Turner, 1922
0.35 63.8 - 39.96 91.4 191.2 0.89 85.3 127.0 50.50 91.4 191.6 1.67 87.9 129.0 57.50 91.45 189.5 5.00 90.0 159.5 62.75 91.4 186.0 6.50 91.0 167.0 72.12 91.55 170.5 7.68 91.1 172.0 83.01 91.5 135.5 10.03 91.2 179.0 86.10 91.55 135.5 15.01 91.3 184.8 90.02 94.8 21.07 91.3 189.0 94.48 102.5 - 24.24 91.3 190.2 96.51 110.2 - 30.50 91.3 191.0 100.00 122.5 - 35.29 91.3 191.8 C.S.T. 192.0°	

Water + o-Aminophenol (C ₆ H ₇ ON)	Water + Salicylamide (C ₇ H ₇ NO ₂)
Sidgwick and Callow, 1924	Meldrum and Turner, 1908
% f.t. % f.t. % f.t.	% b.t.
1.7 0 17.93 116.7 59.73 131.7 3.02 80.8 25.08 120.9 69.61 135.8 4.04 88.0 31.96 123.8 80.46 143.0 7.10 100.2 40.03 126.2 90.48 155.6 9.98 107.1 50.17 128.6 100.00 177.0	8.81. 100.210 9.64 100.235 12.20 100.270 13.90 100.290
Water + m-Aminophenol (C ₆ H ₇ ON)	Water + o-Nitrophenol (C ₆ H ₄ NO ₅)
Sidgwick and Callow, 1929	Sidgwick, Spurrell and Davies, 1915 # f.t. # sat.t.
% f.t. % sat.t.	و کید اگل کا در در الله الله در الله الله الله الله الله الله الله الل
2.6 20 18.13 -7 3.69 32.6 20.16 -4.6 8.0 47.9 25.47 -2.0 10.69 53.0 30.62 +0.3 18.13 60.4 40.18 +1.3 30.62 66.4 46.93 +1.9 C.S.T. 40.18 68.9 52.67 +1.7 46.93 70.2 59.27 +0.2 52.67 71.5 59.27 73.2 68.87 77.2 80.89 85.2 88.84 96.0 100.00 122.1 C.S.T. = +1.9° L ₁ +L ₂ +Ice = -4°	0.321 38.4 0.376 47.5 0.346 42.8 .455 59.4 99.51 43.6 .513 65.7 100.00 44.9 .589 72.8 .690 80.3 .833 88.9 1.343 109.9 3.03 151.8 5.04 169.5 9.90 196.5 99.0 196.5 99.68 196.5 99.14 63.4 98.48 91.7 98.73 82.9 99.24 59.3 L ₁ +L ₂ +Phenol : 99.48% 43.5° C.S.T. above 200°
Water + p-Aminophenol (C ₆ H ₇ ON)	
Sidgwick and Callow, 1924	
# f.t. % f.t.	
1.1 0 50.79 106.5 3.01 59.0 59.45 110.1 6.44 77.0 69.95 116.5 10.09 86.7 79.93 128.0 19.53 96.6 89.48 145.8 33.42 102.0 100.00 186.0 40.34 103.7	

Water + m-Nitrophenol ($C_6H_5N\theta_3$)	Water + p-Nitrophenol ($C_6H_5NO_3$)
Bogoyavlenskii, Bogolyubov and Vinogradov, 1908	Timmermans, 1907
ور بنور بدور فرود لورد کرد کرد کرد کرد کرد کرد کرد کرد کرد ک	% sat.t. % sat.t.
# f.t. # sat.t. 1.9 32.9 4.5 55.9 74.1 43.8 7.2 73.5 76.3 44.5 10.8 85.6 81.4 48.8 20.2 95.7 90.2 64.4 30.2 97.2 100.0 95.2 40.6 97.3 51.2 95.5 63.9 81.7	7.61 67.6 37.24 90.3 11.71 80.4 42.25 90.0 16.84 87.5 50.41 88.2 33.80 90.0 60.82 76.4 Timmermans and Kohnstamm, 1910
70.4 56.5 72.3 49.2	C.S.T.: 94.3° dt/dp (1-120kg/cm²) = +0.01
Sidgwick, Spurrell and Davies, 1925	Bogoyavlenskii, Bogolyubov and Vinogradov, 1908
% f.t. % sat.t.	% f.t. % sat.t.
3.03	1.9 31.5 3.8 49.4 72.6 40.2 6.4 64.8 78.2 44.3 10.7 79.1 81.8 51.3 20.2 89.6 88.5 67.4 32.5 91.8 100.0 111.4 40.6 92.3 49.9 90.0 56.1 85.7 61.1 78.6 70.1 45.0
40,94 98.7 43.12 98.5 48.12 97.9 53.95 94.5	Sidgwick, Spurrell and Davies, 1915
57.19 91.9 60.74 87.3	% f.t. % sat.t.
63.47 82.6 67.38 72.7 71.56 55.8 L ₁ +L ₂ +Phenol: 74.0% 41.5° C.S.T.: 98.7° L ₁ +L ₂ +Ice: 3.16% 41.5°	2.91 34.8 3.34 40.4 3.11 37.2 3.93 47.7 4.30 51.2 72.10 40.4 5.33 59.1 74.18 41.9 6.99 67.8 85.55 43.6 8.28 72.6 77.95 46.7 10.61 79.3 81.50 52.8 13.70 84.4 85.47 63.1 17.53 87.9 88.38 70.9 21.58 90.2 91.14 79.9 26.16 91.3 94.37 91.5 30.41 92.3 98.21 106.0 33.19 92.8 100.00 113.8 36.46 92.6 40.45 92.0 45.40 91.0 51.75 89.0 60.16 80.2
	C.S.T. : 92.8° L ₁ +L ₂ +Phenol : 71.2% 39.6° L ₁ +L ₂ +Ice : 3.26% 39.6°

Water + 2,3-Dinitrophenol ($C_6H_4N_2O_5$)	Water + 2,5-Dinitrophenol ($C_6H_4N_2O_5$)
Sidgwick and Aldous, 1921	Sidgwick and Aldous, 1921
% f.t. % sat.t.	% f.t. % sat.t. % sat.t.
74,32 96.0 6,74 94.5 89.85 112.3 10.90 108.2 100.00 145.1 20.83 120.1 35,13 122.2 52,15 120.4 60,44 116.7	L ₁ L ₂ 97.50 98.0 91.73 172.2 2.33 124.7 98.48 100.0 94.51 146.4 2.97 135.8 100.00 105.6 96.72 113.5 3.91 146.4 - 92.4 5.69 162.1 12.24 194.5 C.S.T above 200° L ₁ +L ₂ +C = 97.5°
$C.S.T. = 122.5$ $L_1 + L_2 + C = 95.0$	
Water + 2,4-Dinitrophenol($C_6H_4N_2O_5$)	Water + 2,6-Dinitrophenol ($C_6H_4N_2O_5$) Sidgwick and Aldous, 1921
Sidgwick and Aldous, 1921	% f.t. % sat.t. % sat.t.
% f.t. % sat.t. % sat.t.	L ₁ L ₂
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	99.11 59.5 93.44 158.0 0.703 71.1 100 62.2 95.96 138.3 1.00 89.5 97.80 102.6 1.87 117.6 98.42 84.5 3.24 133.7 3.97 147.9 12.26 192.5
C.S.T above 200°	C.S.T above 200° $L_1 + L_2 + C = 59.2°$
Efremov, 1940	Water + 3,4-Dinitrophenol ($C_6H_4N_2O_5$)
	Sidgwick and Aldous, 1921
54.5 0.137 75.8 0.301 2.62 122.2 94.02 174.6	% f.t. % sat.t.
87.4 0.587 3.92 139.3 95.10 158.2 96.2 1.22 6.02 157.3 96.0 138.0 105.5 2.4 L ₁ +L ₂ +C 8.03 169.3 96.54 111.8 107.6 98.1 111.4 100.0	89.48 84.5 6.05 82.0 100 134.7 12.79 97.5 23.28 104.6 36.65 105.2 55.40 101.6 70.23 73.8
	74.91 53.0
	C.S.T. = 105.2° L ₁ +L ₂ +C = 52.5°

Water + 3,5-Dinitrophenol ($C_6 H_4 N_2 O_5$)	Water + 2,4-Dinitroresorcinol (C ₆ H ₄ N ₂ O ₆)
Sidgwick and Taylor, 1922	Efremov, 1940
% f.t. % Sat.t.	% f.t. % sat.t. % sat.
77.61 54.1 1.36 51.6 79.57 54.5 3.23 70.4 81.70 55.5 10.83 103.3 83.64 57.9 29.98 124.6 86.31 61.9 57.66 121.5 90.71 69.9 69.66 97.6 93.00 81.3 96.08 100.5 100.00 126.1 C.S.T.= 125° L ₁ +L ₂ +C= 54.1°	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
	N. A. C. W. Yo.
	Water + 3-Nitropyrocatechole ($C_6H_5NO_4$)
Water + 2-Nitroresorcinol ($C_6H_5NO_{1_4}$)	Efremov, 1940
	% f.t.
Efremov, 1940	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.841 14.4 2.02 35.1 3.82 45.8 5.00 L ₁ +L ₂ +Ice 49.9 79.00 L ₁ +L ₂ +C ₆ H ₅ NO ₄ 49.9 84.29 54.9 97.51 75.7 100.00 85.0
98.63 83.4 100.00 84.8 C.S.T. 32.70% 74.4°	% sat.t. % sat.t.
	L ₁ L ₂
Water + 4-Nitroresorcino1 ($C_6 H_5 NO_{14}$)	5.94 61.3 51.13 102.8 9.76 86.8 67.51 90.8 19.00 101.3 74.89 68.3 30.11 105.3 77.78 55.3 39.90 C.S.T. 105.3
Efremov, 1940	
% f.t. % sat.t. % sat.t. 0,68 18,3 L ₁ L ₂	Water + 4-Nitropyrocatechole ($C_6H_5NO_{t_4}$)
$\begin{bmatrix} 2.32 & 47.5 & 10.17 & 62.7 & 40.02 & 73.3 \\ 4.50 & 52.3 & 15.12 & 68.4 & 49.67 & 69.8 \end{bmatrix}$	Efremov, 1940
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	% f.t. % f.t.
69,57 58.7 60.45 57.0 84.10 70.2 94.27 96.5 100.00 112.2	1.02 -3.1 62.5 tr.t. +80.5 4.43 -8.7 66.67 84.7 7.04 -12.0 71.60 90.7 10.80 E -17.5 79.30 105.5 20.12 (4+1)+14.3 90.20 132.7 30.0 41.3 100.00 168.0 39.61 58.5 50.01 71.2

Water + 4-Nitrohydroquinone ($C_6H_5NO_4$)	
Efremov, 1940	LXV. WATER + ORGANIC ACIDS .
% f.t.	Water + Formic acid (CH_2O_2)
0.50 -0.6 1.08 30.2 3.20 49.6	Heterogeneous equilibria .
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Gerber, 1891 - 1892
80.0 70.0 90.0 88.5 100.0 131.2	t % L V
% sat.t. % Sat.t.	ت که اندازی که می نمو که که که که که که که که که که که که که
L ₁ L ₂ 20.0 93.8 50.0 118.8 25.0 110.9 60.0 113.0 35.0 119.2 70.0 89.8 42.0 C.S.T. 120.2 75.0 68.8	30.3 22.66 10.9 42.35 - 9.6 61.35 - 9.2 80.8 - 10.8
42.0 C.S.T. 120.2 75.0 68.8	
Water + Picric acid (C ₆ H ₃ N ₃ O ₇)	Vrevskii and Glagoleva, 1928
	% p % p
Findlay, 1902	L V L V
% f.t. % f.t.	80° 60°
1.04 0 1.94 40 .06 5 2.12 44.6 .09 10 2.46 50 .15 15 3.04 58.7 .21 20 3.05 60 .35 25 3.75 70 .40 26.5 4.45 80 .53 30 5.20 90 .87 38.4 5.95 100	4.0 1.56 - 22.9 13.0 138.8 21.3 10.7 338.4 43.9 31.1 129.0 40.5 26.4 306.2 59.8 54.3 123.6 61.3 54.5 285.5 65.0 61.1 113.0 71.0 68.9 284.7 71.7 75.1 116.9 73.5 74.6 278.6 85.0 90.8 135.3 75.6 78.1 285.4 100.0 100.0 190.3 79.8 84.6 296.3 82.0 86.9 303.6 98.5 89.1 390.5 100.0 100.0 397.9
Efremov, 1940	
% f.t.	Othmer, 1932
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	% %
3.31 62.9 4.82 83.9	L V L V
8.20 L ₁ +L ₂ +Ice 104.8 95.80 L ₂ +L ₂ +Acid 104.8	750mm at b.t.
97.23 111.8 98.80 117.8	90 94 50 35.6 80 81.8 40 24.2 76.5 76.5 30 16.4
100.00 122.4	10 00.4 20 7.0
% sat.t. % sat.t.	60 49.8 10 4.2
L ₁ L ₂ 8.43 108.6 93.95 160.4 9.38 117.9 94.25 158.7 10.20 126.5 95.29 132.9 13.08 146.3 14.11 152.4 16.00 165.3	

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WATER + 4-NITROHYDROQUINONE

Water + 4-Nitrohydroquinone ($C_6H_5NO_4$)	
Efremov, 1940	LXV. WATER + ORGANIC ACIDS .
% f.t.	Water + Formic acid (CH ₂ O ₂)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Heterogeneous equilibria . Gerber, 1891 - 1892 t
% sat.t. % sat.t.	30.3 22.66 10.9
L ₁ L ₂ 20.0 93.8 50.0 118.8 25.0 110.9 60.0 113.0 35.0 119.2 70.0 89.8 42.0 C.S.T. 120.2 75.0 68.8	30.3 22.66 10.9 42.35 - 9.6 61.35 - 9.2 80.8 - 10.8
Water + Picric acid (C ₆ H ₃ N ₃ O ₇)	Vrevskii and Glagoleva, 1928
Findlay, 1902	8 p 8 p
% f.t. % f.t.	L V L V
1.04 0 1.94 40 .06 5 2.12 44.6 .09 10 2.46 50 .15 15 3.04 58.7 .21 20 3.05 60 .35 25 3.75 70 .40 26.5 4.45 80 .53 30 5.20 90 .87 38.4 5.95 100	4.0 1.56 - 22.9 13.0 138.8 21.3 10.7 338.4 43.9 31.1 129.0 40.5 26.4 306.2 59.8 54.3 123.6 61.3 54.5 285.5 65.0 61.1 113.0 71.0 68.9 284.7 71.7 75.1 116.9 73.5 74.6 278.6 85.0 90.8 135.3 75.6 78.1 285.4 100.0 100.0 190.3 82.0 86.9 303.6 98.5 89.1 390.5 100.0 100.0 397.9
Efremov, 1940	
% f.t.	Othmer, 1932
1.01 7.1 1.74 33.3	8 8
3.31 62.9 4.82 83.9	L V L V 750mm at b.t.
8,20 L ₁ +L ₂ +Ice 104,8 95,80 L ₁ +L ₂ +Acid 104,8 97,23 111.8	90 94 50 35,6
98.80 117.8 100.00 122.4	80 81.8 40 24.2 76.5 76.5 30 16.4
% sat.t. % sat.t.	70 65.2 20 9.8 60 49.8 10 4.2
L ₁ L ₂ 8.43 108.6 93.95 160.4 9.38 117.9 94.25 158.7 10.20 126.5 95.29 132.9 13.08 146.3 14.11 152.4 16.00 165.3	

						Shein	er and P	eresleni,	1952		
A.N. a	nd A.J.R.	Campbell	, 1937					b.t.			b.t.
 %		p ₁	P ₂	 D		v			v		
L	v	• •		•				50	mm		
0 11,22 20,30 39,2 55,2 63,5 80,0	0 4.0 8.94 23.00 49.3 63.5 88.0	30° 31.51 29.9 28.5 25.8 19.0 13.8	0.485 0.935 3.02 6.90	31.51 30.385 29.435 28.90 23.45 30.70	,	0.0 5.9 11.3 21.2 28.3 35.6 51.2 57.4	0.0 13.9 22.5 35.2 41.2 47.3 56.5 60.7	38.4 39.3 39.8 40.4 40.8 41.3 41.9 42.1	61.9 68.6 77.0 86.4 91.1 96.1 98.3 100.0	63.9 66.8 71.6 77.3 81.8 89.1 92.2 100.0	42.3 42.3 42.0 40.0 38.7 35.3 33.7 28.5
87.0 100.0	95.0 100.0	3.0 0.86 0.0	38.0 52.2	38.86 52.20		v %	L	b.t.	v V	L	b.t.
		50°					100mm			200mm	
0 11.3 21.8 38.2 56.5 63.5 81.5 88.5 100.0	0 5.7 12.6 21.15 46.5 62.0 89.5 96.5 100.0	92.5 88.0 83.2 74.4 52.0 38.0 7.45 4.05	0 2.07 4.42 11.20 21.40 34.70 79.20 95.90 125.90	92.5 90.07 87.62 85.60 73.40 72.70 86.65 99.95 125.90	Az	0 20.8 62.3 69.6 75.6 78.7 92.9 96.7 100.0		51.6 53.5 55.7 55.9 55.8 55.5 52.5 48.8 43.7	20.7 65.9 70.2 73.1	0 34.9 62.9 70.8 71.8 73.4 94.1 100.0	71.4 71.5 71.5
T-1	1020					Melnik	ov and T	sirlin, l	956.		
	, 1939								7		b.t.
mol% L	v	b.t.	r	۷ v	b.t.	L					- · · ·
<u>-</u>	25 mm							760			
95.6 83.5 73.2 62.3 43.6 33.6	99.4 93.6 81.3 62.3 30.1 20.1	18.0 24.3 29.0 31.4 Az 29.2 28.3	91.8 83.4 73.0 64.7 58.0 43.9 33.7 16.9	49mm 97.4 92.4 79.0 64.7 52.9 30.0 19.1 7.3	33.7 37.7 41.0 42.3 Az 41.5 40.7 40.1 39.0	0.83 5.06 14.78 24.89 33.06 42.04 49.18 54.23 61.37	0.39 2.42 7.67 14.06 20.36 28.77 37.75 44.64 34.21	100.04 100.1 100.3 101.6 102.7 103.8 104.8 105.5 106.4	67.29 73.08 76.80 81.59 84.90 89.08 90.92 100.00	63.43 72.85 77.98 83.60 87.52 90.90 82.36 100.00	107.2 107.6 107.6 107.0 106.2 104.9 104.0 101.0
90.7	96.8	73.0		774 mm							
83.2 72.1	89.6 72.1 59.5	75.8 77.7 Az 77.2	76.8	76.8	108.1 Az	Konow	alow, 18	81			
64.5 51.0	59.5 37.2	75 X		100mm					t		p
34.3 19.1	18.0 8.9	74.0 72.8	67.4	67.4	56.6 Az	i	5	29.1 1 85.5	00 % 59.7	7	187.8 280.2
			ب حد حد الله في غير غير على شير	- 1950 (1950		18. 42, 61.	90	15.3 22 58.0 147.4	.66 % 80.8	30 00	343.6 719.8
						16. 31. 42. 54.	. 80 . 90	29.1 51.7 102.7	70.1 80.9 90.3 99.6	95 70	169.9 209.4 457.85 644.0
						18, 42, 61, 59,	.15 .05	14.5 79 54.5 130.5 123.3	.78 % 80.1 80.1 99.1	80	290.9 292.1 590.7
	_										

						de Con	inck, 19	16			
- Kall	hbaum, 189	23				Az : 7	7.38 %	b.t. =	107 - 1089	S	
	100%	89.53%	70.49%	49.36%	0%						
9.0 10.0 11.0 11.0 12.0 13 14 15 16 17 18 20 21 22 23 24 25 26 27 28 30 31 32 33 33 34 35	-1.0 +0.6 +1.9 3.2 4.4 5.5 6.6 7.6 8.5 9.4 10.3 11.9 12.7 13.5 15.0 15.7 16.4 17.1 19.1 19.7 20.9 21.5 22.1	4.7 6.4 8.0 9.4 10.7 12.0 13.1 14.3 16.3 18.2 19.0 20.7 21.5 22.3 23.1 23.8 25.9 27.1 27.2 28.9 29.9	13.4 15.2 16.6 18.0 19.2 20.3 21.4 22.5 23.4 24.3 25.2 26.1 29.2 27.7 29.1 29.8 30.4 31.1 31.7 32.9 33.5 34.6 35.1	13.1 14.7 16.2 17.5 18.8 20.0 21.1 22.1 22.1 24.1 25.0 25.8 26.6 27.4 28.8 29.4 30.2 30.3 31.4 32.6 33.7 34.7	11.2 12.8 14.15 15.41 16.55 17.71 18.68 19.69 20.66 21.61 22.49 23.30 24.10 24.85 25.57 27.48 29.18 29.30 30.23 30.72 29.31 31.69 32.27 31.21 31.69	Kremanr 97.40 93.58 90.03 85.96 81.54 77.55 2nd set 5.60 11.63 17.63 23.54	1, 1893 f.t. + 5.3 - 0.4 - 6.2 -11.7 -18.8 -25.9	77.5 00 76.71 73.36 72.97 70.11 68.13 67.14 39.62 44.58 44.82	b.t. 107.3 A 100.75 f.t. -20.5 -32.7 -38.0 -41.5 -44.0 -45.8 -24.5 -29.8 -28.4 -34.8	% 64.56 62.52 57.72 54.45 50.71 69.84 72.73 72.97	f.t. -52.5 -50.8 -43.7 -40.8 -35.1
36 37 38 39 40 41 42 43 44 45 46 47 43 49 50	22.6 23.7 24.2 24.8 25.3 25.8 26.7 27.1 27.6 28.0	29.3 30.4 30.9 31.9 32.4 33.4 33.9 34.3 35.2 35.7 36.1	35.6 36.1 37.1 37.6 37.1 37.6 39.4 39.4 39.4 40.7 41.1 41.5	35.2 35.7 36.7 36.7 37.2 37.6 38.0 38.5 38.9 39.3 40.5 40.5 40.5 41.3	33.98 34.95 34.95 35.30 35.71 36.13 36.55 36.96 37.75	Abegg, M 0.99	-16.3 -20.6	50.19 53.21 68.13 f.t.	-38.7 -44.0 M 3.001 4.920	-5	-31.6 -20.5
51 52 53	23.9 29.3 29.7	36.6 37.0 37.4	42.2 42.6	-	38.13 38.50 38.89 39.26			ay, 1903			
54 55 56 57 58 59 60 61	30.1 30.5 30.9 31.2 31.6 32.0 32.3 32.6	- - - - -	42.9 43.3 43.7 44.1 44.4 44.7 45.1 45.4 45.7	- - - - - - -	39.26 40.00 40.38 40.73 41.10 41.43 41.30 42.14	1.5 3.8 4.5 12.3 18.7 22.0	32 95 34 1 5	- 0.64 - 1.62 - 1.89 - 5.28 - 8.50 -10.34	89.97 91.59 94.03 95.63 97.33 98.35 100.00	- : - : + :	7.11 4.69 1.30 0.87 3.25 4.65 7.00
							1010				
Jozefo mol	owicz, 193 % p	b.t.	mo1%		b.t.	Faucon %	f.t.	%	f.t.	×	f.t.
100. 93. 88. 77. 68. 58.	00 743 80 711 20 677 44 633	100.50 102.22 103.68 105.75 106.86 107.37	47.79 36.95 28.09 14.35 4.28 0.00	595 619 646 700 742 760	107.05 105.89 104.62 102.31 100.65 100.00	3.92 8.30 10.00 20.80 33.00 40.90	- 1.81 - 3.11 - 4.00 - 9.30 -15.80 -21.50	47.22 51.17 56.10 60.50	-25.20 -28.20 -34.10 -38.20 -48.00 -45.00	77.00 85.56 89.10 92.40 95.80 100.00	-35.00 -17.80 -10.60 - 4.20 + 0.80 + 8.51
	ات احد خدد کنیز کنیز علی شدر سی احد احد احد احد احد احد کنیز کنیز سی سی احد احد	·									

Jones a	nd Bury, I	927				Prope	rties of p	shacas			
m	f.t.	m	f.t.			- Tope		, iases	_		
0.2419 .2 68 4 .3362 .4273 .6262	.515 .641 .810	1.674 1.930 2.099 .233 .426	~3.032 .475 .744 .989 4.312			Vrevsl %	cii and GI			d (vapour))
.9379 .9379 .9761 1.0410 .0990 .3620 .6580	.737 .807 .924 2.028 2.490	.807 .813 3.005 .083 .201	.723 .942 .948 5.254 5.385 -5.576	2 3 4 5		10.7 26.4 54.5 68.9 74.6	1.80 1.97 2.15 .20	7 5 0	60° 13.0 31.1 54.3 61.1 75.1	1.94 2.16 .33 .37	
Glagole	eva, 1941					78.1 84.6 86.9 99.1	.3. .4. .4. .5.	5 33 5	90.8	.64 .767	
8	f.t.	Е	min.			100.0	.6:	28			
99.68 95.16 91.70 86.46	+1.5 -11.5 -28.1 -35.0	-40.5 -39.8	-			Bied	ermann, 1	888			
83.20 77.90 73.54	-38.3 -31.5	-39.7 -39.9 -40.2	$ \begin{array}{c} 1.4 \\ 0.7 \\ 0.1 \end{array} $			%	đ	%	ð	%	ð
73.54 72.55 72.01 66.30 66.37 62.73 61.50 61.42 58.33 57.99 56.13 53.57 53.57 51.45 47.50 47.50 19.45	-31.5 -30.7 -33.9 -43.0 -42.2 -43.6 -42.6 -39.5 -33.9 -31.3 -35.4 -37.3 -35.4 -37.3 -7.7 (2+1)	-40.2 -44.6 -44.6 -44.8 -44.6 -45.3 -44.6 -39.6 -39.3 -39.2 -39.2 -40.7	1.5 1.6 1.3 1.1 0.9 - - 0.6 0.95 0.8			0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	0.9991 1.0016 .0041 .0066 .0091 .0116 .0141 .0166 .0191 .0216 .0241 .0269 .0297 .0353 .0353 .0409 .0437	33 34 35 36 37 38 39 40 41 43 445 46 47 48 50	15°	67 68 69 70 71 72 73 74 75 76 77 78 80 81 82 83 84 85	1.1543 .1562 .1581 .1600 .1619 .1633 .1657 .1676 .1695 .1714 .1733 .1752 .1771 .1779 .1811 .1832 .1853
Kuznets	sova and Be	rgman, 195	6			19 20 21	.0465 .0493 .0521 .0548 .0575	51 52 53 54 55 56 57 58	.1243 .1266 .1284 .1302 .1320	86 37 88 89	.1895 .1916 .1937 .1953 .1979
mol%	f.t.	E	mol%	f.t.	Е	22 23 24 25	.0602 .0629	56 57	.1338 .1356	90 91	.200
100.0 80.0 74.8 69.5 64.5 55.0 55.0 54.2 50.0 44.6 42.0 41.5	8.3 -5.6 -8.2 -13.0 -17.3 -23.2 -28.3 -35.3 -42.0 -46.7	-49.0 49.5 49.0	41.0 39.8 37.0 35.8 33.4 31.7 31.2 28.0 25.0 23.1 20.0 0.0	-48.5 -46.8 -43.0 -33.5 -29.3 -22.8 -19.7 -10.3 0.0	-49.0 -50.0 -49.0 -50.0	25 26 27 28 29 30 31 32 33	.0656 .0683 .0710 .0737 .0764 .0791 .0816 .0841	58 59 60 61 62 63 64 65 66	.1374 .1392 .1410 .1429 .1448 .1467 .1486 .1505 .1524	92 93 94 95 96 97 98 99 100	.2043 .2065 .2087 .2109 .2131 .2153 .2175 .2197 .2219
~ ^ ~ ~						<u></u>		····			

	Le Blanc, 1389 and 1396
Ludeking, 1886	% d
% d % d	20°
22° 0 0.9978 20.3 1.0459 2.8 1.0050 24.2 .0542 3.1 .0056 29.9 .0642 3.5 .0066 33.8 .0775	0 0.99823 18.69 1.04475 29.06 1.06950
3.5 .0066 33.8 .0775 4.0 .0080 38.9 .0891 4.8 .0098 46.0 .1051 6.0 .0123 56.1 .1281 7.8 .0169 63.0 .1431 9.2 .0201 71.9 .1624 11.3 .0248 83.6 .1876 14.5 .0325 100.0 .2155	Turbaba, 1893 % d 0° 15° 30°
Perkin, 1886 mol% d t d	4.87 1.01451 1.01212 1.00736 9.31 .02748 .02372 .01803 16.69 .04806 .04229 .03508 20.10 .05747 .05079 .04292 25.05 .07062 .06286 .05408 30.09 .08398 .07513 .06545 35.11 .09700 .08690 .07675 35.11 .0900 .08690 .07675
15° 50mo1% 0 0.99913 4 1.1829 50 1.16977 15 1.16977 100 1.22627 25 1.16117	40.11 .10984 .09913 .03783 45.10 .12249 .11102 .09892 50.07 .13506 .12266 .10939 55.09 .14752 .13427 .12094 59.73 .15892 .14512 .13109 65.34 .17249 .15797 .14320 71.03 .18599 .17073 .15532
Otten, 1887 % d % d	80.09 .20670 .19035 .17400 92.33 .23229 .21433 .19664 99.64 .24513 .22678 .20683
18°	Charpy, 1893
4.943 1.0143 59.960 1.1440 9.549 .0258 70.064 .1663 20.343 .0520 89.023 .2036 29.827 .0739 95.535 .2210 39.946 .0376 100.000 .2238	% d % d
30.021 .1214	0 0.9987 70.5187 1.1844 19.4277 1.0554 85.6284 .2185 37.5362 .1030 100 .2452 54.5668 .1456
Hartwig, 1888	
18°	Lüdemann, 1935
	N mol% d N mol% d
4.03 1.0113 28.18 1.0687 7.79 .0101 55.21 .1286 14.35 .0362 100.00 .2198	25° 0 0 0.99707 12.1785 28.360 1.11465 1.1539 2.126 1.01009 16.1336 41.918 .14681 4.5330 8.894 .04521 18.9176 53.402 .16791 6.9830 14.403 .06858 23.0030 75.166 .19569 9.1078 19.698 .08801 26.3131 99.382 .21377

% 0 20.2 40.6 61.1 68.4 Glagolo % 27.79 32.30 47.57 48.69 51.40 56.23	tos, 1908 d 20° 0.9982 1.049 .098 .143 .159 va, 1945 d 0° 0.99823 1.063 .082 .1133	77.2 87.1 100.0	d .1.71 .176 .192 .216 d o 0.99707 1.0288	
0 20.2 40.6 61.1 68.4 Glagolo % 27.79 32.30 47.57 48.69 51.40 56.23	20° 0.9982 1.049 .098 .143 .159 .159 .000 0.99823 1.068 .082 .1133	74.5 1 77.2 87.1 100.0	d 0.99707	
20.2 40.6 61.1 68.4 Glagolo % 27.79 32.30 47.57 48.69 51.40 56.23	0.9982 1.049 .098 .143 .159 va, 1945 d 0° 0.99823 1.063 .082 .1133	77.2 87.1 100.0	.176 .192 .216	
2 0 27.79 32.30 47.57 48.69 51.40 56.23	d 0° 0.99823 1.063 .082 .1133	25° 0 22.81 31.00	0.99707	
0 27.79 32.30 47.57 48.69 51.40 56.23	0.99823 1.063 .082 .1133	25° 0 22.81 31.00	0.99707	
0 27.79 32.30 47.57 48.69 51.40 56.23	0.99823 1.063 .082 .1133	0 22.81 31.00	0.99707	
58.50 61.28 63.38 63.84 66.60 70.79 72.31 78.97 97.64	.1148 .1198 .1325 .1325 .1326 .1415 .1484 .1503 .1584 .1622 .1639 .1820 .2270	35.10 41.79 52.61 55.40 56.10 56.33 57.62 63.24 64.96 68.50 69.90 71.10 73.34 75.50 79.68 97.64	.0522 .0640 .0784 .1208 .1298 .1292 .1295 .1324 .1489 .1502 .1571 .1599 .1615 .1682 .1717 .1782 .2127	
				
76	<u> </u>			
5.8 10.6 21	1.0153 .0274 .0526	64 100	1	.1517 .2210
Glagolew	а, 1947			
wt%	mo1%	d 20°	25°	
0 28.9 36.5 38.0 47.6 50.6 51.4 56.2 58.5 66.3 66.6 72.2 78.9 80.0 97.5	6.25 4.50 4.46 2.88 2.69 2.41 1.99 .95 .68 .16 .09	0.99825 1.0630 .1010 -1130 .1210 .1220 .1350 .1363 .1365 .1660 .1700 .1830 .1870 .2274	0.99707 1.04600 .0660 .0650 .1119 .1190 .1280 .1280 .1350 .1603 .1650	
	51.40 56.23 56.60 58.50 61.28 63.84 66.60 70.79 72.31 78.97 97.64 Guillaume, \$\frac{\psi}{2}\$ Glagolew wt% 61.4 56.2 51.4 56.2 58.5 60.3 66.6 70.4 72.2 78.9 80.0	48.69 .1145 51.40 .1198 56.23 .1325 56.60 .1325 58.50 .1366 61.28 .1415 63.38 .1484 63.84 .1503 66.60 .1584 70.79 .1622 72.31 .1639 78.97 .1820 97.64 .2270 ### d 5.8 1.0153 10.6 .0274 21 .0526 Glagolewa, 1947 wt% mo1% 0 28.9 6.25 36.5 4.50 38.0 4.46 47.6 2.88 50.6 2.69 51.4 2.41 56.2 1.99 58.5 .95 60.3 68 66.6 16 70.4 .09 72.2 0.96 78.9 63 80.0 64	51.40 .1198 52.61 56.23 .1325 55.40 56.60 .1325 56.10 58.50 .1366 56.33 61.28 .1415 57.62 63.38 .1484 63.24 63.84 .1503 64.96 66.60 .1584 68.50 70.79 .1622 69.90 72.31 .1639 71.10 78.97 .1820 73.34 97.64 .2270 75.50 79.68 97.64 5.8 1.0153 64 97.64 5.8 1.0153 64 97.69 Glagolewa, 1947 wt% mol% d 20° 0 - 0.99825 1.0630 38.0 4.46 47.6 2.88 .1130 50.6 2.69 .1210 51.4 2.41 .1220 55.5 2.58 .1360 60.3 .68 .1363 66.6 .16 .1375 58.9 .63 .1830 66.70,9 .1660 72.2 0.96 .1700 78.9 .68 .1830 80.0 .64 .1830	51.40 .1198 52.61 .1208 56.23 .1325 55.40 .1298 56.60 .1325 56.10 .1292 58.50 .1366 56.33 .1295 61.28 .1415 57.62 .1324 63.38 .1484 63.24 .1489 63.84 .1503 64.96 .1502 66.60 .1584 68.50 .1571 70.79 .1622 69.90 .1599 72.31 .1639 71.10 .1615 78.97 .1820 73.34 .1682 97.64 .2270 75.50 .1717 79.68 .1782 97.64 .2270 75.50 .1717 79.68 .1782 97.64 .2227 Suillaume, 1946

	
	Glagoleva, 1946
Viscosity and surface tension .	% n % n
Viscosity and Survey	20° 25°
	0 1006 0 891 27.79 1195 22.88 979
Tsakalotos, 1908	32.30 1215 31.00 1029 47.57 1323 35.19 1039
% n % n	48.69 1328 41.79 1076
20°	51.40 1347 52.61 1174 56.30 1394 55.40 1219 56.60 1400 56.10 1227
0 1003 74.5 1535 20.2 1108 77.2 1576	58.50 1400 56.33 1229
40.6 1246 87.1 1669 61.1 1430 100.0 1780	63.38 1478 64.96 1305
68.4 1480	66.60 1577 71.10 1360 70.49 1519 73.34 1362
	72.31 1525 79.68 1427 78.97 1601 97.64 1598
Die lander to a dolla	97.64 1680
Bingham, White and al., 1913	
t 7 100% 77.69% 52.94% 28.53% 0%	Morgan and Neidle, 1913
	<i>g</i> σ t σ
35 1334 1202 1018 870.0 722.0	30° 25%
45 1123 1016 860.4 729.5 601.3 55 961.8 872.8 738.6 622.9 507.9	0.000 71.030 25 55.665 1.000 69.816 30 55.186
65 - 759.6 642.9 540.0 436.8 75 - 669.6 563.7 474.2 380.7 85 - 594.8 500.0 418.7 33.5 6	2.500 68.024 35 54.706 5.000 65.706
85 - 594.8 500.0 418.7 335.6	10.00 62.061 50% 15.00 59.197
من بن با الله الله الله الله الله الله الله ا	20.00 56.917 25 48.585 25.00 55.190 30 48.101
	30.01 53.575 35 47.618 40.00 50.664
	50.00 48.112 75% 60.00 45.731
Davis and Jones, 1915 and 1918	70.00 43.240 25 42.494 75.00 41.990 30 41.985
% п % п	30.01 40.703 35 41.476 90.00 38.026
15° 25° 15° 25°	100.00 35.281
0 1134 891 60 1591 1287 10 1215 932 70 1693 1371	
20 1282 1014 80 1803 1452	
40 1408 1135 100 1963 1571	Forch, 1899
50 1469 1202	M(18°) t σ M(18°) t σ
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Davis, 1918	.1905 17.97 71.61 3.187 17.95 60.54 .3818 15.41 70.45 16.05 18.14 45.37
vol% η vol% η	
15° 25° 15° 25°	
0 1134 891 60 1591 1287	Drucker, 1905
10 1215 932 70 1693 1371 20 1282 1014 80 1803 1452	с σ с σ 25° 35° 25° 35°
30 1339 1072 90 1914 1546 40 1408 1135 100 1963 1571	25° 35° 25° 35°
50 1469 1202	4.543 67.95 66.90 61.15 47.45 46.50 11.80 62.75 62.00 64.39 46.60 45.75
	19.53 57.25 56.40 68.69 45.65 44.75 39.64 52.65 52.00 85.69 41.55 40.30

Le Blanc, 1889 and 1896	Guillaume, 1946
% n _D	% (α)magn. 106 (5780 <mark>Å</mark>)
20°	20°
0 1.33325 18.69 1.34311 29.06 1.34820	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Gerber, 1891 - 92	*in radians, gauss, centim.
% Dn(sol - aq.)	
10 0.0050 20 .0100 30 .0143 40 .0185 50 .0227 60 .0264 100 .0374	Otten, 1887 % и а.10 ⁵ b.10 ⁸ 0°
Homfray, 1905 % t nD	4.943 37.051 2871 12447 9.549 52.032 2652 10742 20.343 69.405 2431 8783 29.327 74.301 2293 7555 39.946 71.366 2180 6633 50.021 62.596 2150 6817 53.960 51.294 2092 6659 70.064 33.937 1922 3331 89.023 13.869 2001 6006
0.0 19.0 1.3333 62.7 19.5 .3625 71.9 19.7 .3652 00.0 19.2 .3717	$= \frac{\varkappa_{t} = \varkappa_{0} (1 + at + bt^{2})}{2}$
	Hartwig, 1888 and 1891
Guillaume, 1946 % n ₅₇₈₀	-
5.8 1.3379 10.6 .3410	4.03 29.377 43.846 52.699 7.79 43.176 59.732 73.133 14.35 58.749 83.523 97.506 28.18 75.174 101.046 117.280 55.21 57.000 76.439 92.274 100.00 4.760 6.577 81.20
21.0 .3465 64.0 .3658 100.0 .3744	55.21 57.000 76.439 92.274 100.00 4.750 6.577 81.20
Perkin, 1886	_
50mo1% 19.3° (α)magn. = 0.8748	

Whetham	, 1897										
%	н	%	и			Heat con	stants				
100 97,53 96,59 95,67 93,89 88,93 81,72 70,33	0.0141 3.675 5.111 6.304 9.435 18.54 32.76 51.99	18° 54.99 38.29 21.77 15.21 9.49 2.30 0.57	97.3 86.3 70.0	48 31 1 7 69 50		Lüdekin, %	0.9774 .9727	% - 16° 33.8 33.9 46.0	0.8430 .8191		
Glagolev	va, 1941					7.8 11.3 14.5 20.3 24.2 29.9	.9636 .9476 .9324 .9056 .8877 .3613	56.1 63.0 71.9 83.6 100.0	.7866 .7397 .7076 .6665 .6120		
mo1%	и	mo1%	н	mol%	н	27.7	.0013	100.0	.5500		
	20°	,		60	0						
91.7 62.7 60.0	2.3 39 43	39.7 37.7 37.0	73 81 89	94.26 69.39 67.11	5 29 40	Bury at	nd Davies,	1932			
55.8 55.6	66 69	35.7 35.1 34.5	89 97 107 79	58.64 55.64 52.88	64 82	%		U			
54.9 51.5 51.3	69 72 57	34.3 33.3	76 71	51.28 49.13	73 72		13.5 - 16	.5°			j
48.7 48.3	56 52 53 53 53 61	32.3 31.4	72 75	47.39 40.00	73 77 94	5.762 11.100	7 0	0.965 .935			}
47.0 46.7	53 53	31.3 29.5	98 113	37.04 35.03	120 141	16.330 21.610	0	.904 .874	3		Ì
45.0 43.9	61 64	28.8	114	34.48 33.10	113 112	28.020 31.650	0	.338 .818			
,	•			32.26 30.70	112 113						
						Glago1	eva and Ch	erbov, 1	936		
Pacault	and Chedi	n 1050				%	U	%	U	%	U
%	χ	#, 1930 %	χ			25	0	60°		80	0
			^			16.15 29.50	0.9091 8428	16.50 29.60	0,9191 .8013	16.10 29.00	0.9334 .8707
0 10 19.9 30.1 37.0 52.3	0.720 .690 .659 .630 .611 .563	60.0 69.9 79 .0 89.9 100.0	0.542 .515 .483 .456 .425		 	29.50 42.20 50.20 53.40 61.30 70.20 97.70 98.50 100.00	.8428 .7813 .7416 .7002 .6961 .6426 .5680 .5165 .5094	49.00 68.80 86.95 93.00	.7601 .6645 .5821 .5317	29.00 41.90 49.50 68.80 93.50 99.00	.3707 .8130 .7740 .6825 .5733 .5446

Faucon, 1910	Water + Acetic acid ($C_2H_hO_2$)
% Q mix. % Q mix.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
95 73.13 70 166.04 90 138.86 60 127.79 85 174.92 50 96.52 80 185.24 30 37.93 75 184.80 15 19.60 5 6.06	Heterogeneous equilibria Equilibrium L + V
	Gerber, 1892
Campbell, 1937	t % t %
% Q mix. % Q mix.	L V L V
30°	35.4 18.2 10 35.4 80.22 73.6 49.86 - 11.5 49.85 - 72.2
10.34 1.0 66.73 58.8 26.30 3.0 80.30 56.0 41.78 16.2 93.46 29.5 54.65 58.0	80.55 - 12.9 80 - 66.8
	Roloff, 1893
% Q vap. % Q vap.	% b.t. p
30° 50°	L V
0 580.0 88.5 129.7 8.9 557.5 80.0 200.0 19.9 570.0 63.5 276.5 44.2 516.0 54.0 369.0 79.5 206.0 88.5 189.0	29.51 21.40 100.9 742.2 36.00 25.97 101.2 752.4 61.20 49.02 101.9 743.4 62.25 47.03 102 747.3
88.5 189.0 91.6 171.0 100.0 153.5	Rayleigh, 1902
	L V L V
	at b.t.
	6.77 5.10 61.56 49.07 14.58 11.36 72.27 60.45 26.82 20.35 81.66 73.06 37.46 28.10 90.70 86.22 49.98 38.49
	Pascal, Dupuy and al., 1921
	% b.t. % b.t. L V L V
	763ma
	1
	5.0 4.0 100.1 60.23 47.00 101.7
	15.19 11.27 100.1 80.15 70.00 104.3 20.13 15.25 100.2 90.13 32.50 108.0 25.51 18.60 100.4 95.50 90.00 111.0 30.18 22.20 100.5 99.00 97.50 115.0 40.09 29.23 100.6 100.00 100.00 113.0
	25.51 13.60 100.4 95.50 90.00 111.0 30.18 22.20 100.5 99.00 97.50 115.0
	30.18 22.20 100.5 99.00 97.50 115.0 40.09 29.23 100.6 100.00 100.00 113.0

						1			· · · · · · · · · · · · · · · · · · ·	
Porami	in and Ma	rkov, 1924	·			Donnatt	1020			
%		b.t.	%	,	b.t.	Bennett				
L	V		L	V			b.t.	L %	v	
0 5	0.00 3.33	100.00 100.06 100.13 100.21	55 60 65	39.72 44.32 49.28	101.72 102.17 102.67			725 , Omm		
10 15	6.67 10.01 13.39 16.80	100.13 100.21 100.32	70 75	54.67 60.55	103.28 103.96		116.8	100 92.0	100	
15 20 25 30 35 40	16.80	100 44	80	66.99 74.06	104.83		112.5 109.1	86.5	96.0 92.0	
30 35	20.27 23.83	100.58 100.75 100.93 101.17	85 90 95	74.06 81.87 90.48	106.30 103.45		107.3	79.5 70.0	89.5 82.5	
45	27.52 31.37	100.93	95 100	90.48 100.00	111.90 118.90		107.3 105.0 103.7 102.9 102.2 101.1	70.0 61.0 54.0 49.5 37.5	73.0 70.0	
50	35.42	101.44					102.2	49.5 37.5	62.5 51.0	
						.	100.4 99.2	25.0 0.0	36.0 0.0	
Othme	er, 1928				•					
	%		%							
L	v	L		V		Cornell	and Mont	onna, 1933		
		at b.t.		~	1	wt%	mo1%	wt%	mo1%	
94.1 81.5	89.2 70.9 52.7	37.3 22.3 12.3	27. 16.	, 8 , 3	1	L		w U/o V	mo1 /o	
66.4 52.1	52.7 39.1	12.0	8.	9	ı		20	0		<u>,</u>
						90.1	73.2	84.0	61.2	
	_		_			90.1 89.6 85.0 80.4 75.8 69.7 65.7	63.0	84.0 83.1 76.9	59.6 50.0	
Vrevski	ii, Miscer	nko and Mu	romzew,	1928	1	75.8	48.5	70.9 65.2 57.9 53.2	42.2 36.0 29.7	
 						65.7	36.5	57.9 53.2	2 5.5	
L %	v	р	% L	% V	P	55.9	27.6	47.6 43.4	21.5 18.7	
	0.0°			42.0°		60.4 55.9 50.5 45.5 41.1	73. 2 72. 2 63. 0 55. 1 48. 5 40. 8 36. 5 31. 4 27. 6 23. 5 20. 1 17. 4 16. 9 14. 2 11. 7 9. 1 8. 9 7. 0	38.4 34.5	15.8 13.6	
_			•	2.0	ı	40.4	16.9	31.0 30.3	11.9	
4.84 18.45	3.15 13.23 26.25 38.58 54.40 71.78	355.9 352.1	1 8.35	13.23	<0.2	40.4 35.5 30.5 25.1 24.6	11.7	30.3 26.5 22.7 18.8	$\frac{9.8}{8.1}$	
34.89 49.38	26.25 38.58	344.6 337.2 326.6	49.62 65.10	40.40	60.2 58.0	24.6	9.1 8.9	18.6	6.5 6.4	
66.17 79.99	54.40 71.78	326.6 303.5	80.40 95.12	57.63 74.45 92.05	58.0 55.6 52.8 47.2	30.0 15.3 10.1	7.0 5.1 3.3	15.0 11.5	$\substack{5.0\\3.8}$	
96.00 100.00	91.79 100.00	303.5 246.7 208.3	100.00	100.00	47.2 38.5	9.7	$\frac{3.3}{3.1}$	7.4 7.2	2.4	
100.00	100,00	205,0			I					
						Keyes,	1933			
					ı	niol % ()	L)	mol % (V)		
					ļ		350mm	200mm	100mm	
					ļ	50.70 35.90 21.45 10.78 5.37 1.076	37.65 25.38	38.69 26.14	43.3 27.33	
1					1	21.45 10.78	25.38 10.24 6.65	26.14 14.34 7.24	27.33 16.02 8.06	
					1	5.37 1.076	3.08 5 0.65	3.65 0.74	4.39	
					!	0.679 0.226	0.39	0.46 0.15	$0.36 \\ 0.55 \\ 0.19$	
					1				· · · · ·	

-				,							
York Jr.		s, 194	 			Othmen	r, Silvi	s and Sp	iel, 1952		
b.t.	L wt% m	01%	V wt%	mo1%		%		b.t.	%	· · · · · · · · · · · · · · · · · · ·	b.t.
		1.5	94.8	84.5		L	v		L	v	
$108.7 \\ 105.7$	90.2 7	3.3	83.5 73.6	60.2 45.5			20mm			70mm	54.9
102.5	63.2 3	4.1	62.4 40.8	33.2 23.6		100 88.6	100 84.8 75.2	30.0 25.2 24.2	100 88.25 80.0	100 83.5 73.7	48.3 47.3
101.2	41.4 1	4.2 7.5 3.0	40.0 31.5 24.1	$16.7 \\ 12.1 \\ 8.7$		79.8 65.3 49.3	59.6	23.7 23.1	65.9 49.9	57.0 40.2	$\substack{46.1\\45.4}$
			~1.1			35.4 20.55	$\substack{28.7 \\ 15.1}$	22.8 22.4	33.75 20.7	27.8 14.9	45.1 44.8 44.6
		_				10.3	6.1 6.4	22.1 22.1 22.1	${\overset{10.15}{_{0}}}$	6.3	44.4
	and Othmer	r, 194		%		3.8	$\substack{3.8\\1.0}$	22.1	100	760mm 100	118.5
b.t.	L %	v	b.t.	L L	v	100	200mm	70.0	92.7 87.3	87.1 79.7	109.7 107.2
	760mm			500mm		100 88.2 80.0	$ \begin{array}{c} 100 \\ 83.1 \\ 71.3 \end{array} $	79.9 71.3 69.9	79.05 69.7 60.3	68.8 57.4 47.3	105.4 104.0 102.7
117.5 9	9.55 9	8.85	105.20 99.55	$\substack{100.0\\95.0}$	$\frac{100.0}{90.9}$	65.9 49.9	71.3 54.75 38.9	68.3 67.5	$\frac{48.5}{38.1}$	36.6 28.4	$101.7 \\ 101.5$
109.1 9 105.6 8	2.70 7	4.40 1.90	94.28 92.54	86.0 77.2	76.7 65.2	35.6 20.8	27.2 15.1	66.9 66.7	30.9 22.8	23.1 17.1	100.9 100.7
101 6 5	2.60 3	2.40 7.60 1.50	91.43 90.74 89.94	68.4 59.3 48.2	54.6 45.0 34.6	10.2	7.0	66.4 66.4	9.6 4.3 0	$\frac{7.1}{3.1}$	$100.3 \\ 100.2 \\ 100.0$
100.9 100.59	6.40 2. 5.70 1	5.50 8.30	39.53 89.20	36.6 25.1	26.0 17.8 9.2	100	2053mm 100	153.6	v	5931mm	- 50.0
$\frac{100.37}{100.12}$	6.00 1 4.60 .	1.40 3.20	88.98 88.83	13.4 4.5	3.0	92.4 84.4	86.9 74.1	$143.9 \\ 138.7$	100	100	200.7
100.00	0.00 250mm	0.00	88.70	0.0 125mm	0.0	74.8 63.4 56.25	61.45 48.5 43.0	135.2 133.6 132.9	94.3 86.4	88.8 76.2	$189.0 \\ 182.1$
	0.0 10	0.0		100.0	100.0	45.2 40.35	33.3 30.0	131.8 131.7	76.2 75.45 65.4	61.4 61.0 51.5	177.2 177.1 175.0
77.33 8	5.4 9 9.5 8 3.5 7	1.7 32.5 4.5	64.25 61.53 59.83	96.1 89.3 78.6	92.9 83.0	30.7 29.6	22.85 22.7	$130.9 \\ 130.8$	57.5 49.3	44.4 37.0	$\frac{17}{172.2}$
75.12 7	9.2 6	9.3	58.61 58.10	64.4 56.3	70.2 55.8 46.2	21.5 17.8 13.5	16.75 13.7 10.4	130.7 130.5	41.1 35.35	30.75 27.3	$171.1 \\ 171.0$
73.09 5 72.51 3	5.0 4 9.0 3	$\frac{5.0}{1.8}$	57.58 57.28	39.1 28.7	33.8 24.4	11.3	8.8	130.5 130.4 130.4	29.6 22.1 17.9	23.0 17.8 14.3	170.8 170.5 170.3
71.87 1	6.1 1	2.5	56.92 56.68	17.8 89.8	$\frac{14.6}{7.5}$	3.3	5.8 2.5 0	130.4 130.4	$\substack{11.4\\10.0}$	9.2 8.3	170.0 170.0 169.9
	0.0	6.2 0.0	56.57 56.40	5.2 0.0	3.7 0.0	H	6270mm		$\frac{3.8}{0}$	3.2	169.9 169.9
						100 83.8	100 73.25		26	610mm	
Brown an	d Ewald,	1950				60.0 41.3 30.0	47.7 31.7 22.2	221.5 218.7 217.8	5.15	4.53	243.4
mo 1%		b. t.	mo1		b. t.	22.3 18.1	$\begin{array}{c} 17.8 \\ 14.6 \end{array}$	217.2 217.1	$\begin{array}{c} 3.27 \\ 1.11 \\ 0.50 \end{array}$	$\frac{2.93}{1.10}$ $\frac{0.43}{1.10}$	243.4 243.0 p
L		7/	L Omm	v		11.4 11.3 4.9	9.7 9.5	216.9 216.3	0.00	0.43	243.3 243.3
	99.9774 1	17.96	66.22	54.27	107.36	0.9		216.7 216.5			
99.9787 99.9753 99.660	99.9653 1 99.9540 1 99.311 1	17.92 17.91 17.64	58.02 46.41 35.37	45.04 34.09 24.76	105,85 104,17 102,86						
99.455 95. 2 59	99.9540 1 99.311 1 98.878 1 90.21 1	17.51 15.03	26.12 17.49	$17.83 \\ 12.17$	102.86 101.92 101.24						
91.00	00.04 I	13.81 11.51 09.84	7.90 3.24	$\frac{5.71}{2.39}$	100.54 100.24 100.07						
78.02 70.83	67.27 19 59.29 19	09.84 08.16	1.09	0.79	100.07						
		` ·									
						L					

Vilim,	Hala and	i al., 19	54 (fig.)		Vapou	r pressure	and boi	ling temper	rature	
	01%		mol%			ļ					
L	V	760 mm		<u> </u>							
100	100	50 mm 50) .	37		II	valov, 188			t	
90 80 7 0	82 68 57	30) :	28 21		t	р .8.2%	t 50	p 0.1%	80.22	р %
70 60	5 7 46	20 10))	14 7		I					
						16.65	13.35 87.70	16.45 49.95	12.5	16.0	11.8
						49.35 80.55	352.50	30.20	$\frac{35.0}{335.6}$	49.85 80.0	78.2 300.7
Marek,	1955					100.00	750.20	100.00	724.0	100.05	645.7
b.t.	L L	v	b.t.	L %	v						
		400mm				Kahl	baum, 1893	3		· · · · · · · · · · · · · · · · · · ·	
97.3 95.0	97.2 92.4	94.4 86.0	$\frac{92.3}{90.1}$	86.2 74.6	76.3 61.5 45.7	p	1004	b.t		10.054	
91.6 88.4 87.2	92.4 82.0 65.6	70.4 50.6 41.4	87.6 85.6	60.4 38.7	45.7 27.0	 	100%	75%	50.195%	19.95%	
86.0	56.0 44.6	31.2	83.9 83.7	12.8 9.3 2.5	8.7 6.4 1.7	11 12	19.5 21.0 22.3	16.3	15.2	$\frac{13.4}{14.8}$	
85.1 84.3	33.9 22.4	$\frac{22.8}{14.4}$	83.4			13 14 15	23.5	17.7 18.7	15.2 16.5 17.8	$\frac{15.1}{17.3}$	
$83.5 \\ 83.15$	$\frac{8.3}{3.2}$	$\substack{5.0\\1.8}$	(se	cond seri	es)	16	24.6	19.8 20.8 21.8	$\frac{18.9}{20.0}$	$\frac{18.3}{19.3}$	
		74	8.3mm			17 18	25.7 26.7 27.7	21.8 22.7	20.9 21.9 22.7	$\frac{20.3}{21.2}$	
$\frac{118.04}{110.85}$	100 84.8	100 7 5.0	100.87	16.5	11.2	19 20 21	28.6 29.5 30.4	23.5 24.4	23.6	22.0 22.3	
107.51 104.90	69.2 52.7	55.4 39.0	100.21 99.83	$9.18 \\ 3.82$	6.42 2.78 0.516	21 22	30.4 31.2 32.1	25.2 26.0	24.4 25.1 25.9	23.6 24.3	
101.84	27.6	18.6	99.65	0.732	0.516	23 24	32.1 32.9 33.7	26.8 27.5 28.2	25.9 26.6 27.3	25.1 25.3	
						25 26	34.4	28.9	28.0	$\frac{26.5}{27.1}$	
Bushmak	in and L	utugina,	1956			22 23 24 25 26 27 28 29 30	35.1 35.7 36.4 37.1 37.7	29.5 30.2 30.8 31.4	28.6 29.2 29.8 30.3 30.9	27.8 28.4 29.1 29.6 30.1	
mo 1%		mo 1	76			31 32 33	38.3 38.9	31.9 32.5 33.0	31.4 32.0	30.7 31.2	
L	v	L	<u>v</u>			34 35	39.4 40.0	33.5 34.0	32.5 33.0	31.8 32.2	
	7 60 m					36 37	40.5 41.0	34.5 35.0	33.5 34.0	32.7 33.2	
94.2 89.2	88.8 82.2	44.4 33.7	32.3 23.7			38 39	41.5 42.0	35.4 35.9	34.4	33.7 34.1	
87.9 79.1	82.2 80.7 68.4	31.6 28.5 22.3 22.0 17.7	22.0 19.5 15.4			40 41	42.5 43.0	36.4 36.8	34.9 35.3 35.8	34.6 35.0	
77.4 75.0	66.0 63.9 55.6	22.3 22.0	15.4 15.2			42 43	43.5 44.0	37.2 37.7	36.2	35.4 35.9	
68,6 58,4	55.6 45.0 45.2	10.1	15.2 12.3 11.8			44 45	44.5 44. 9	38.1 38.5	36.7 37.1 37.5	36.3 36.7	
58.4 54.1	45.2 40.6	5.0	3.7			46 47	45.4 45.8	39.0 39.4	37.9 38.3	37.1 37.4	
						48 49	46.3 46.7 47.2	39.8 40.2	$\frac{38.7}{39.1}$	37.9 38.3 38.7	
						50 51	47.2 47.6	40.6 41.0	39.5 39.9	38.7 39.0	
						===					

WATER +	ACETIC ACID	3:
Fredenhagen and Liebster, 1932	Freezing temperature	
N p ₂ N p ₂		
25°	Rudorff, 1870	
0.0184 0.00407 1.190 0.2235	% f.t. % f.t.	
.1063 .0195 .210 .240 .2045 .0378 .500 .316	100.000 +16.70 92.593 +6.25	
2259 0404 513 334	99.503 15.65 91.743 5.3	
.527 .0846 .927 .412 .677 .1167 2.328 .546 .802 .1373 2.545 .613	98.523 13.25 90.090 3.6	
007 .1833	1 96 154 10 50 86 957 -0.2	
	94.340 8.20 82.645 -5.1	
	93.458 +7.10 30.646 -7.4	
eyes, 1933		
b.t.	Rudorff, 1872	
350mm 200mm 100mm	% f.t. % f.t.	
0.70 82.0 69.0 56.0 5.90 80.5 67.5 53.9	1.96 -0.65 18.70 -6.4	
1.45 80.3 66.9 51.8	3.85 -1.20 23.08 -8.15 7.41 -2.40 26.47 -9.6	
0.37 78.6 65.4 50.0	9.91 -3.20 33.33 -12.2	
.679 77.5 64.4 49.3	15.25 -5.15 38.27 -14.7	
226 77.1 64.1 49.1		
	Grimaux, 1373	
sen, Miller and Christian, 1955	% f.t. % f.t.	
mol % lg a	98.75 +14.4 50.62 -19.9	
	92.69 +5.5 43.46 -16.4 96.75 -1.4 38.22 -14.5 76.48 -11.7 30.77 -10.8	
40 0.06	68.82 -19.0 23.77 -8.2	
80 0.24	66.44 -20.3 20.78 -7.2 61.86 -24.0 18.11 -6.3	
V110	61.86 -24.0 18.11 -6.3 55.50 -22.3 16.21 -5.4	
activity coefficient		
	=	
	Kremann, 1893	
	% f.t. % f.t.	
	97.09 13.1 50.82 -22.3 90.32 7.6 50.04 -20.6	
	90.32 7.6 50.04 -20.6 35.41 1.0 47.45 -20.6 30.61 -4.1 42.16 -15.3	
	76.24 -7.2 38.15 -14.1	
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
	63.41 -21.5 29.03 -9.6 59.22 -26.1 24.96 -6.9	
	59.13 -26.1 20.91 -5.5 55.75 -24.4 16.37 -4.1	
	54.69 -25.7 11.24 -2.4 53.41 -22.3 5.44 -0.7	

F=====						T				 -1
					l			002		ĺ
Picker	ing, 1893					Jones and				
%	f.t.	<u> </u>	f.t.	%	f.t.	%	f.t.	<u> </u>	f.t.	
1.104 1.598 4.731 5.187 7.819 10.813 14.630 18.454 21.992 25.336 23.532 31.432 34.470 37.254 39.796	-0.34 -0.54 -1.56 -1.69 -2.53 -3.53 -4.34 -7.51 -8.82 -10.04 -11.28 -12.52 -13.70 -14.86	42.444 44.563 47.316 50.098 54.923 59.334 63.318 67.968 72.126 72.457 74.509 76.681 78.984 81.423 84.029	-16.01 -17.09 -18.12 -19.62 -22.37 -24.37 -22.97 -19.12 -15.87 -12.60 -10.53 -8.20 -6.03 -3.16	86.091 88.257 89.763 91.321 92.934 94.605 95.463 97.223 98.135 98.595 99.055 99.527 100.000	-0.84 +1.13 3.05 4.81 6.63 8.59 9.63 10.83 12.37 13.37 14.09 14.81 15.68 16.626	100.00 98.869 98.673 97.905 97.669 96.248 95.062 93.931 93.562 91.113 89.430 87.660	+16.50 14.44 14.12 12.92 12.57 10.61 9.05 7.71 6.55 4.39 2.50 +0.46	85.98 83.99 82.26 81.46 29.75 22.48 21.94 18.23 15.41 9.55 0.99	-1.36 -3.57 -5.50 -6.40 -10.92 -8.05 -7.85 -6.19 -5.45 -3.30 -0.34	
					====	Iones 10	04 and Io	nes and Ge	tman, 1904	
Abegg, 1	804				!	M M	f.t.	M	f.t.	
I	.077	· ·							10.500	
1.022 2.116 3.126 5.244		f.t. -1.922 -4.070 -6.252 -10.872				0.1 0.5 1.0 2.0 3.0 4.0	-0.210 0.945 1.908 4.000 6.190 _8.260	5.0 6.0 7.0 8.0 10.0	-10.500 13.000 15.200 18.000 -24.000	!
<u> </u>										
Roloff,	1895					Ballo,	1910			
%	f.t.	Z	f.	t.		%	f.t.	%	f.t.	
1.23 2.44 7.50 8.07 11.85 18.81 20.95 27.94	-0.406 -0.795 -2.425 -2.641 -3.910 -6.430 -7.240 -9.780	34.23 37.60 40.31 47.54 51.80 53.83 57.52 60.21	0 -1 -1; 0 -2; 3 -2; 1 -2;	2.62 4.01 5.22 8.39 0.74 2.30 4.34 5.90		13.77 22.80 31.90 36.56 40.94 46.81 51.24 62.70 65.40	-3.6 -6.5 -10.5 -11.75 -15.0 -18.2 -22.0 -23.2 -20.0	69.65 72.10 77.76 82.20 86.71 89.07 92.30 96.31	-16.0 -13.0 -8.75 -4.0 +1.0 +3.5 +7.0 +11.6 +16.0	
Do Conn	et, 1899						-			
<u> </u>	f.t.	%		'.t.		Faucon,			- <u></u>	
		63	.29 -28	.87 metas	t.	%	f.t.	. %	f.t.	
100.00 39.67 83.62 75.44 70.03 63.43	16.675 2.95 -3.94 -12.80 -18.10 -23.87	62 60 55 47 38 25	.43 -24 .00 -26 .86 -24 .03 -19 .27 -14 .40 -8	.90 .75 E .32		2.52 6.10 10.52 15.85 19.70 26.12 31.40 35.72	-0.80 -1.90 -3.20 -5.30 -6.80 -9.20 -12.10 -13.80	58.10 62.50 67.60 70.45 76.27 77.60 80.50 85.60	-27.00 -24.60 -19.10 -16.80 -11.30 -9.90 -7.80 -2.01	
						40.36 44.80 50.20 55.44	-15.50 -18.40 -20.40 -23.80	90.34 93.50 97.01 100.00	-3.11 +8.15 +11.96 +16.68	

Rosza, 1911	Timmermans and Kasanin, 1959
% f.t. % f.t.	t P trans. P melt.
100 16.72 20.773 -7.255 99.787 16.30 13.377 -4.330 99.645 15.97 8.450 -2.811 99.056 14.95 5.662 -1.724 97.026 11.92 3.517 -1.135 91.781 5.30 1.356 -0.605 90.121 3.55 0.939 -0.312 84.860 2.33	10 % 10 1150 900 35 1600 1600 50 - 2100 25 % 15 1260 910 20 1350 1140
Paterno and Salimer, 1913 % f.t. % f.t.	20 1350 1140 25 1420 1200 30 1400 1550 (32,5°) 35 1500 1500 40 1600 - 45 - 1800 50 1900 1840 60 - 2510
4.54 -1.60 46.48 -21.4 10.61 -3.84 54.37 -27.4 15.00 -5.15 62.29 -26.9 20.73 -7.18 71.44 -18.4 25.70 -8.92 77.61 -12.24 30.14 -10.90 85.24 -2.50 36.30 -12.96 90.41 +3.24 39.09 -14.60 96.61 +12.00 100.00 +16.02	50 \$\frac{1}{5}\$ 15
Jones and Bury, 1927	5 1160 720 15 1250 950 25 1420 1200 35 1600 1380 45 1800 1700
m f.t. m f.t. 0.1669 - 0.314 2.290 -3.974 .2653 .437 .435 4.199 .3097 .578 .533 .357 .3401 .636 .605 .465 .5432 1.002 .762 .704 .6514 .197 .885 .900	15 1250 320 20 1350 950 25 1420 1100 35 1600 1300 45 1800 1650 60 - 3330
.8247 .505 .910 .937 .8510 .549 3.029 5.113 1.126 2.021 .259 .466 .243 .227 .329 .566 .396 .490 .330 .564 .642 .901 .348 -5.587 .689 .987 .689 .998 0.2811 -0.526 (second .812 3.183 0.8752 1.590 series) 2.006 .507 2.005 3.505 .114 .679 2.589 4.433 .273 -3.937 3.423 -5.727	

					. 10.0	
		1)	Oudem	ans, 1866 a	and 1868	····
Properties of phases			%	0°	d 10°	15°
Density				0.9999 1.0016	0.9997 1.0013	0.9992 1.0007
		ll l	1 2 3 4 5 6 7 8 9	.0033	.0029	.0022 .0037
			4	.0069	.0060 .0076	.0052
Vrevskii, Mishchenko and Mur	omtsev. 1928	[6	.0088 .0106	.0092	.0067 .0083
	(V) d (V)	 }	7 8	.0124 .0142	.0108 .0124	.0098 .0113
		,	9 10	.0159	.0140	.0127 .0142
42.00°	80.09°	11 1	11	.0176 .0194 .0211	.0156 $.0171$.0157
13.23 2.92 13. 40.40 3.30 26. 57.63 3.36 38.	23 2.63 25 2.82	1	12 13	.0211	.0187 .0202	.0171 .0185
57.63 3.36 38.	58 3.05	11 1	14 15	.0245	.0217	.0200 .0214
74.45 3.63 54.	40 3.19 78 3.34	K 1	16	.0262 .0279	.0232 .0247	.0228
92.05 100.00 3.79 91, 100.	79 3.48 00 3.59	1 1	17 18	.0295 .0311	.0262 .0276	.0242 .0256
100.	oo 3.39	11 1	19	.0327	.0291	.0270
		==== ź	20 21	.0343	.0305 .0319	.0284 .0298
		2	20 21 22 23 24 25 26 27 28	.0359 .0374 .0390	.0333	.0311 .0324
van der Toorn, 1835		2	24	.0390 .0405	.0361	.0337
% d %	ď %	ð 2	25 26	.0420 .0435	.0375 .0388	.0350 .0363
15°		2	27 28	.0450 .0465	.0401 .0414	.0375 .0388
	1.0463 58	1.0731	29 30	.0479	.0427	.0400
0 0.9991 29 1 1.0010 30	.0476 59	·0/30 3	31	.0493 .0507	.0440 .0453	.0412 .0424
2 .0028 31 3 .0046 32	.0489 60 .0501 61	.0740 3	32	.0520 .0534	.0465	.0436 .0447
0 0,9991 29 1 1,0010 30 2 ,0028 31 3 ,0046 32 4 ,0063 33 5 ,0080 34 6 ,0098 35 7 ,0115 36 8 ,0132 37 9 ,0150 38 10 ,0168 39	.0513 62 .0528 63	.0747	32 33 34 35	.0547	.0477 .0489	.0459
6 .0098 35	.0537 64	.0750 .0753	35 36	.0560 .0573	.0501	.0470 .0481
7 .0115 36 8 .0132 37 9 .0150 38 10 .0168 39 11 .0185 40	.0549 65 .0560 66	0755 11 3	36 37 38	.0573 .0585	.0513 .0524	.0492
9 .0150 38	.0571 67	.0756 3 .0757 3 .0757 4 .0757 4	39 40	.0598 .0610	.0535 .0546	.0502 .0513
$\begin{array}{cccc} 10 & .0168 & 39 \\ 11 & .0185 & 40 \end{array}$.0592 69	.0757 4	40 41	.0622 .0634	.0557 .0568	.0523 .0533
11 .0185 40 12 .0202 41 13 .0219 42 14 .0236 43 15 .0252 44	.0602 70	.0756	42	.0646	.0578	.0543
13 .0219 42 14 .0236 43 15 .0252 44 16 .0268 45	.0622 72	.0754 4 .0750 4	42 43 44 45 46 47 48	.0657 .0668	.0588 .0598	.0552 .0562
16 .0268 45	.0631 73 .0640 74 .0649 75	.0745 4 .0739 4	45 46	.0679	.0608	.0571 .0580
16 .0268 45 17 .0284 46 18 .0301 47	.0649 75 .0658 76	.0732	47	.0679 .0690 .0700	.0618 .0627	.0589
. 19 .0317 48	.0666 77	.0713 4	49	.0710 .0720	.0636 .0645	.0598 .0607
20 .0333 49 21 .0349 50	.0674 73 .0682 79	·0/01 5	50 51	.0730	.0654 .0663	.0615 .0623
20 .0333 49 21 .0349 50 22 .0364 51 23 .0380 52 24 .0395 53 25 .0410 54 26 .0424 55	.0689 80 .0696 81	.0672 .0655	52	.0749	.0671 .0679	.0631
24 .0395 53	.0702 82	.0655 5	52 53 54 55 56 57	.0758 .0767	.0679 .0687	.0638 .0646
25 .0410 54 26 .0424 55	.0702 82 .0705 83 .0714 84	.0617 5 .0594 5	55 56	.0775	.0694	.0653
23 .0380 52 24 .0395 53 25 .0410 54 26 .0424 55 27 .0438 56 28 .0451 57	.0720 85 .0726	.0565	57	.0749 .0758 .0767 .0775 .0783 .0791	.0701 .0708	.0660 .0666
-0 ,0431	.0720	5 5	58 59	.0798 .0806	.0715 .0722	.0673 .0679
		6	60 61	.0813	.0723	,0685
		6	62	.0820 .0826 .0832	.0734 .0740	.0691 .0697
		6	63 64	.0838	.0746 .0752	.0702 .0707
		6	65 66	.0845	.0757	. 071 2
		6	57	.0851 .0856	.0762 .0767	.0717 .0721
			58 59	.0861 .0866	.0767 .0771 .0775 .0779	.0725
		7	70 71	.0871	.0779	.0729 .0733
		<u> </u>	72	.0875 .0879	.0783 .0786	.0737

34 35 36 37 38 39 40 41 42 43 44 45	31 32 33	28 29 30	24 25 26 27	22 23 24	20 21	17 18 19	15 16	12 13 14	9 10 11	3 4 5 6 7 8 9	3 4 5	0 1 2		100	98 99	95 96 97	92 93 94	90 91	87 88 89	84 85 86	81 82 83 84 85 86	79 80	76 77 78	73 74 75
.0426 .0437 .0448 .0453 .0468 .0478 .0488 .0498 .0507 .0516 .0525 .0534	.0394 .0405 .0416	.0360 .0372 .0383	.0324 .0336 .0348	.0299 .0312	.0248 .0261 .0274 .0287	.0222 .0235 .0248	.0181 .0195 .0208	.0154 .0168	.0112 .0126	.0062 .0084 .0098	.0026 .0041 .0055	0.9983 0.9997 1.0012	20°	-	= =	- -	-	.0876	.0385 .0381 .0876	.0894 .0892 .0889	.0396	.0896 .0897 .0897 .0897	.0891 .0893 .0894	.0883 .0886 .0888
.0360 .0370 .0380 .0389 .0398 .0407 .0416 .0425 .0433 .0441 .0449	.0321 .0331 .0341 .0351	.0311	.0268 .0279 .0290 .0300	.0234 .0246 .0257	.0211 .0223	.0176 .0188 .0199	.0140 .0152 .0164	.0115 $.0128$.0064 .0077 .0090 .0103	.0038	.9998 1.0012 .0025	0.9958 .9972 .9985	30°	- d	- -	.0714	.0749 .0739 .0727	.0773 .0776 .0758 .0749 .0739 .0727	.0783	.0793 .0790 .0787	.0796 .0795	.0798 .0798 .0797 .0797	.0796 .0797 .0798	.0789 .0792 .0794
.0291 .0300 .0308 .0316 .0324 .0332 .0340 .0348 .0355 .0363 .0370	.0255 .0264 .0274 .0283	.0236 .0 2 46	.0207 .0217 .0227	.0176 .0187 .0197	.0155 .0166	.0123 .0134 .0144	.0090 .0101 .0112	.0056 .0067 .0079	.0032 .0044	.9996 1.0008 .0020	.9960 .9972 .9984	0.9924 .9936 .9948	40°	.0553	.0625 .0604 .0580	.0660 .0644	.0696 .0686 .0674	.0720 .0713 .0705	.0731 .0726	.0742 .0739 .0736	.0747 .0746 .0744	.0748 .0748	.0747 .0748 .0743	.0742 .0744 .0746
																		:						
5.00 10.00 20.00 29.99 39.99	0	%	 Koh]		99 100	96 97 98	93 94 95	91 92	88 89 90	84 85 86 87	8.3	79 80 81 82	76 77 78	73 74 75	70 71 72	67 68 69	65 66	61 62 63 64	59 60 61	58	51 52 53 54 55 56 57	51 52 53	49 50	46 47 48
4 .0133 0 .0257 3 .0392	0.9986	d	lrausch, 18		.0525 . 0 497	.0589 .0570 .0549	.0620 .0606	.0652 .0643 .0632	.0674 .0668 .0660	.0688 .0684 .0679	.0696 .0694 .0691	.0699	.0699 .0700 .0700 .0700	.0693 .0695 .0697	.0686 .0689 .0691	.0675 .0679 .0683	.0667 .0671	.0653 .0658 .0663	.0636 .0642 .0648	.0624	.0604 .0611 .0618	.0583 .0590 .0597	.0567 .0575	.05 43 .0551 .0559
76.40 7 99.70	18°	%	376		.0413 .0384	.0480 .0460 .0438	.0512 .0497	.0545 .0535 .0524	.0569 .0562 .0554	.0585 .0580 .0575	.0593 .0589	.0600 .0599 .0598 .0596	.0601 .0601 .0601	.0597 .0599 .0600	.0591 .0593 .0595	.0583 .0586 .0588	.0572 .0576 .0579	.0564 .0568	.0549 .0554 .0559	.0533 .0538 .0544	.0521 .0527	.0501 .0508 .0515	.0487 .0494	.0465 .0472 .0480
.0660 .0693 .0490	1.0581	đ			.0301 .0273	.0370 .0350 .0327	.0416 .0403 .0388	.0438 .0428	.0462 .0455 .0447	.0481 .0475 .0469	.0489 .0485	.0499 .0497 .0495 .0492	.0501 .0501 .0500	.0499 .0500 .0501	.0495 .0497 .0498	.0488 .0491 .0493	.0482 .0485	.0472 .0475 .0479	.0460 .0464 .0468	.0450 .0455	.0434 .0440 .0445	.0416 .0423 .0429	.0404 .0410	.0384 .0391 .0397
							į :		`					1			Í							

A	đ		A	đ		%	g, 1886	%	d	
		15.50					22			
0 10 20 30 40 50 60 65	0.9987 1.0129 1.0264 1.0393 1.0511 1.0601 1.0672 1.0691	17.5°	70 75 80 85 90 95 100	1.06 1.07 1.07 1.07 1.07 1.06 1.05	00 34 27 03 51	0 6.2 7.7 10.0 14.3 18.2 25.0 29.4 35.7	0.9978 1.0029 .0061 .0091 .0170 .0223 .0269 .0317	40.0 45.4 52.6 62.5 69.0 76.9 86.9 100.0	1.0469 .0493 .0548 .0613 .0638 .0653 .0626 .0442	
Reiss,	1880					Noack,	1886			
Z	đ		%	d		%	đ	%	đ	
	20°	40°		20°	40°		20	0		
0.0 2.7 5.4 10.8 19.3 28.1 38.0 47.0 50.0	0.9982 1.0020 .0059 .0166 .0245 .0323 .0452 .0536	0.9924 0.9955 0.9986 1.0051 .0140 .0224 .0306 .0377 .0397	59.0 62.0 64.5 67.0 70.3 77.6 82.0 85.0	1.0618 .0634 .0645 .0655 .0666 .0677 .0664 .0654	1.0443 .0455 .0460 .0470 .0475 .0480 .0460 .0446	14.82 29.90 44.85 64.85 69.85 74.77	1.01741 .03627 .05105 .06449 .06642 .06732	79.32 85.48 89.82 94.70 98.52 99.35	1.06759 .06608 .06358 .05833 .05120 .04955	
53.0 56.0	.0577 .0600	.0415	93.2 100.0	.0604	.0379	Otten, 1	1887			
						×	đ	%	đ	
Damier	n, 1881						18	G		
0 10.81 20.72 30.77	0.99650 .99827 1.0125 .0277	% 20° 68.97 72.73 76.92 81.63	.069	50 90		4.33 9.79 20.79 30.46 37.80 49.37	1.0050 .0129 .0281 .0400 .0480 .0586	58.32 67.50 90.87 95.92	1.0649 .0695 .0672 .0613	
41.49 51.81 57.14 62.50	.0401 .0582 .0596 .0621	86.96 93.02 100.00	.065)2		Le Blanc	and Rohl	and, 1888	and 1896	
Perkin	, 1886		_			%·	20°	đ		<u> </u>
mö1≴	150	d	35	•		0	20	0.99823		
50 100	1.07472 1.05612	20° 1.06973	1.064			18.19 18.70 40.33 100.00		1.02368 .02452 .04869 .04954		

Mohr, 188	8			Turbaba, 1890 - 1893
×.	đ	K	đ	% d % d 0° 30° 0° 30°
1 2 3 4 5 6 7	1.001 1.002 1.004 1.005 1.007 1.008	51 52 53 54 55 56	1.061 1.062 1.063 1.063 1.064	59.92 1.08113 1.05502 79.13 1.08927 1.05938 71.98 .03758 .05907 80.20 .08925 .05915 76.16 .08878 .05941 81.58 .08929 .05901 77.92 .08911 .05940 85.99 .08843 .05735
8 9 10	1.010 1.012 1.013 1.015	57 58 59 60	1.065 1.066 1.066 1.067	Charpy, 1893
11 12	$\frac{1.016}{1.017}$	61 62	1.067 1.067	% d % d
13 14 15 16 17 18	1.018 1.020 1.022 1.023 1.024 1.025 1.026	63 64 65 66 67 68	1.068 1.068 1.068 1.069 1.069 1.070	0° 0 0.9987 58.3412 1.0799 21.2324 1.0360 31.2354 .0896 39.4516 1.0614 89.6541 .0878
20 21 22	1.027 1.029 1.031	69 70 71 72	1.070 1.071 1.071	Humburg, 1893
23 24 25	1.032 1.033 1.034	72 73 74 75 76 77	1.072 1.072 1.072	% d % d
20 21 22 23 24 25 26 27 28 29 30 31	1.035 1.036 1.038 1.039 1.040 1.041	78 79 80 81	1.073 1.0732 1.0732 1.0735 1.0735 1.0732	16° 0 0.9990 18.204 1.0251 7.766 1.0109 39.077 .0508 12.780 1.0177 100 .0557
31 32 33 34 35 36 37	1.042 1.044 1.045 1.046	82 83 84 85 86 87	1.073 1.073 1.073 1.073	Oppenheimer, 1898
38	1.047 1.048 1.049	88	1.073 1.073 1.073	<u>β</u> d 20°
39 40 41 42 43 44 45	1.050 1.051 1.051 1.052 1.053 1.054 1.055	89 90 91 92 93 94	1.073 1.073 1.0721 1.0716 1.0708 1.0706	0 0.99813 16.37 1.02120 23.53 1.03060 30.50 1.03880
46 47 48 49 50	1.055 1.056 1.058 1.059 1.060	96 97 98 99 100	1.069 1.068 1.067 1.0655 1.0635	Friedländer, 1901
				% d
Possible	1.00			24.65° 0 0.9972 59.60 1.0594
Buchkrem %	er, 1890 d	% d		59.60 1.0594 81.49 1.0403 99.35 1.0454
	20°			
0 5.216 9.727	0.99827 1.0058 .0122	51.029 1.0583 56.242 .0619) [Rudorf, 1903
14.944 20.207 26.213 32.124 37.398 43.491 45.696	.0196 .0268 .0342 .0409 .0464 .0520	61,947 .065; 67,046 .0676 72,222 .069; 79,282 .069; 84,511 .069; 98,519 .0672 92,536 .063; 100 .0502	5 3 9 4 4	M d M d 25° 0.0 0.9971 2.555 1.0174 .319 0.9997 5.111 .0355 .639 1.0021 10.222 .0605 1.277 1.0073

Ionas	1004 Io	nes and Ge	tman 10	04						
	· · · ·					Dunstan	and Tho	le, 1909	l	
<u> </u>	đ	%	đ			%		đ		·
	0						20°	25°	30°	
0.601 2.995 5.968 11.85 17.63 23.51	0.99854 1.00180 .00534 .01302 .02091 .02863	0 34.57 8 40.10 8 45.66 2 56.48	1.034 .041 .047 .051 .062	316 336 372		0.00 19.88 35.17 60.80 80.00 99.15	0.9983 1.0260 .0433 .0648 .0699 .0522	0.99 1.02 .04 .06	1.0209 101 .0377 502 .0557	
Drucke	r, 1905									
С	d		с	đ		Guerdj	ikova, 19	910		
	25°	35°		25°	35°	%		đ		d
0 2.175 5.991 10.98 19.24 41.48	0.99707 1.00288 .00780 .01254 .02279 .04636	0.99409 0.99690 1.00124 .00815 .01713 .03887	51.82 1 65.24 83.07 91.33 93.48	.05456 .06482 .06381 .05754 .05085	1.04740 .05243 .05305 .04668 .04215	12.86 30.44 48.57	4	.0111 .0364 .0534	25° 66.640 97,120	1.0637
						Wilson	and Sidg	wick, 19	013	
Zecchi	ni, 1905						N	1	đ	
2000 111	t	d	%	t	d			18		
3.4754 9.6857 9.6968	25.4 26.0 24.1	1.00189 .01039 .01076	65.9568 65.9768 99.5375	25.4 25.6	1.06180 .06184 .04349		0 1.9 5.6	80 6658	0.9986 1.0149 1.0414	
21.3943	24.9	.02497				Mathews	and Cool	ce, 1914		
Tsakal	atos, 190)8				t		đ	tt	đ
%	đ	Я	đ			0 25 40		.0889 .0642	55 70	1.0346 .0190
	20)°				40		.0492		
0 22.3 40.7 50.4	0.9982 1.026 .046 .055	71.2 77.9 85.6 100.0	1,068 .069 .067 .052	•		Herz, 1	918			
62.2	.064		, 004	•		%		đ	%	d
Grunma	ich, 1909					2.1 5.7		.0014 .0067	20° 10.8 19.6	1.0140 .02566
%	d	%	đ			====				
		24°	w =				ritsch, l			
10.6	0.9982 1.0134	67.80 78.03 87.60	1.06	'00		%		đ	<u> </u>	đ
20.3 43.9 50.22	.0265 .0522 .0576	97.50	.06 .05 .05	76 61		5 10 20 30 40 50		.0058 .0133 .0257 .0393 .0496 .0600	18° 60 70 80 90.87 95.92 99.70	1.0655 .0685 .0690 .0672 .0613 .0485
				 						

							
Carstens, 1924			Spells	, 1936	<u>.</u>		
% d	×	d	%	đ	%	đ	
0 0.99 9.20 1.01 16.07 .02 28.16 .03 40.00 .05	21 68.00 17 81.10 73 99.37	1.0610 .0697 .0648 .0537	0 10 20 30 40 50	0.9992 1.0142 .0214 .0412 .0523 .0615	60 70 80 90 100	1,0685 .0733 .0748 .0713 .0553	ļ
Faust, 1926			Waring,	Steingise	r and Hym	an, 1943	
22° 50 mol %	d = 1.0666		mo1%	đ	mol%	đ	
Kohner and Gressi	mann, 1927 d wt%	mol% đ	0.0 10.75 19.19 26.21 33.37	0.9971 1.0271 .0477 .0538 .0596	45.15 59.08 83.05 99.08	1.0627 .0645 .0538 .0441	
24.5360 8.38 .0 39.1935 15.44 .0 49.595 21.81 .0	01298 74.027 02891 84.654 04438 97.303 05302 99.105 06258	44.68 1.06458 60.99 .06366 91.05 .04875 96.50 .04687	Guillat %	ume, 1946	1	Я	đ
Atsuki and Ishii,	1931		7.20 14.55			30.80 100	1.0407 1.0517
% d	я	đ					
5 1.005 10 .013	20° 8 50	1.0600	Roloff,			1 (.1.\
10 .013 20 .025 30 .039 40 .049	7 70 3 80	.0655 .0678 .0690 .0485		0 1,23 2,44	0 - 0.406 - 0.795	5 .01	00 02 04
Thomas and Perman,	1934			7.50 8.07 11.85 18.81	- 2.425 - 2.641 - 3.916 - 6.43	$\begin{bmatrix} 1 & .0 \\ 0 & .0 \end{bmatrix}$	14 19
% d	%	đ	ļ	20.95 27.84	- 7.24 - 9.78	.0.	41
10.0 1.005 20.5 .016 30.7 .026	57.3	1,036 ,046		34.23 37.60 40.31 47.54 51.80 53.83	-12.62 -14.01 -15.22 -18.39 -20.79 -22.30	. 0- . 0: . 0: . 0: . 0: . 0:	53 57 65 70
Gibson, 1935				57.52 60.21 62.14	-24.34 -25.90 -27.47	.02	76 76
% d	% d						
25° 0.00 0.9970 6.81 1.0065 11.62 .0127 16.89 .0197 31.16 .0363 41.17 .0462	50.53 1.05 69.18 .06 79.37 .06 39.80 .06 94.33 .05	534 547	mo1 %	258	5373 4914	4 13 8 34	.10 ⁷ b.10 ⁹ 850 4221 468 3356
				- 00- / =		J.L.	

D 1005	
Drucker, 1905 π (1-100atm) π π (1-100atm)	Viscosity and surface tension .
25° 35°	115003.13
0 47.0 0 46.3	Wijkander, 1878
6.85 46.4 6.85 45.3 20.13 45.8 20.13 45.3 41.30 45.8 96.25 96.0	13° 20° 30° 40° 50°
59.96 52.4 74.42 62.7 81.10 68.0 96.25 90.7	97.9 1906 1640 1350 1127 967 94.3 2671 2222 1752 1421 - 89.2 3106 2549 1981 1575 1287 87.0 3187 2601 2009 1595 1304 84.7 3303 2682 2069 16262 1327 82.8 3330 2694 2070 1643 1324
Carstens, 1924	80.4 3354 2726 2093 1635 1327 80.4 3360 2727 2079 1640 1327 78.6 3388 2739 2091 1643 1316
% п % п	76.7 3322 2701 2052 1618 1314 76.1 2 3355 2708 2073 1623 1287 75.6 3314 2664 2038 1603 1297
18°	72.3
0 49.1 52.57 50.0 9.20 46.7 68.00 57.2 16.07 46.0 81.10 67.4	Noack, 1886
28.16 45.0 99.37 91.3 40.00 46.5	t
	0% 14.82% 29.90% 44.85% 64.85%
Thomas and Perman, 1934 π (0-100atm.) 30° 10.0 43.3 20.5 41.7 30.7 39.5 42.6 38.1 57.3 35.1 Gibson, 1935 π π π π 25° 0.00 39.35 50.53 39.98 6.81 38.27 69.18 44.35 11.62 37.77 79.37 48.06 16.89 37.56 89.80 53.69 31.16 37.53 94.33 57.15 41.17 38.49 99.50 63.34	0 1800.0 2472.8 3215.4 3911.4 4975.1 5 1513.6 2062.6 2680.2 3286.2 4084.9 10 1298.7 1754.7 2272.2 2772.0 3427.0 15 1131.9 1515.6 1952.5 2373.6 2921.5 20 998.9 1325.4 1697.2 2058.4 2531.7 25 890.5 1171.1 1490.0 1804.2 2215.8 30 800.8 1043.8 1318.8 1595.4 1958.2 35 725.3 937.3 1176.2 1421.9 1744.3 40 660.9 847.1 1055.7 1275.8 1565.2 45 605.5 770.0 953.2 1151.7 1413.3 55 515.3 645.4 788.6 953.0 1170.5 60 478.1 594.5 722.1 872.8 1072.4 69.85% 74.77% 79.32% 85.48% 89.82% 0 500.6 5143.6 5232.9 4889.9 4403.2 5 4237.2 4323.4 4380.2 4113.2 3767.0 10 3579.5 3656.2 3711.9 3505.1 3244.6 15 3068.4 3156.6 3180.6 3020.3 2812.2 20 2657.5 2737.5 2737.5 2754.0 2628.1 2454.8 25 2324.4 2394.2 2405.0 2306.6 2156.1 30 2050.0 2109.3 2116.5 2040.4 1805.9 35 1821.2 1871.6 1876.6 1817.3 1694.6 40 1628.9 1671.0 1674.3 1628.4 1515.0 45 1465.6 1500.7 1503.0 1467.3 1361.3 155.1 325.8 1354.5 1356.0 1325.8 1325.2 1324.9 1228.3 1229.3 1209.1 1114.8 10 94.70% 98.52% 99.35% 99.75% 99.80% 0 3534.9 2388.8 2477.2 1741.0 1725.8 5 152.198.8 1354.5 1366.0 1328.8 1229.0 1325.8 1354.4 1368.3 1265.0 1268.0 1252.1 12871.6 1877.8 1104.6 1015.1 125.2 1298.8 1442.4 1368.3 1265.0 1268.0 125.2 1298.8 1442.4 1368.3 1265.0 1268.0 1281.4 1037.0 980.0 941.9 937.9 45 1174.4 260.3 212.6 878.1 872.3 1244.4 1037.0 980.0 941.9 937.9 45 1174.4 260.3 212.6 878.1 872.3
	50 1081.5 910.0 853.0 821.0 812.5 55 1000.1 857.6 799.9 768.4 757.9 60 928.4 811.1 752.4 720.4 708.0

	1,000						1.0				
D'Arcy,	1889				i	·		and 1905			
t	η(H ₂ 0=	1) t	n(H ₂ 0)=1) t	η (Η20=1)	%	<u>η</u>	25°		η	
99.1% 21 29.7 39.4 57.3 49.4 67.3 32.5	1.21 1.06 0.921 .740 .810 .662 .566	81.0 20 30 40 48.5 61.3 72.5 78.1	2.63 2.02 1.59 1.34 1.06 0.889 0.815	73. 19.8 29.9 40.1 49.3 58.5 68.4 81.7	2.61 1.99 1.56 1.29 1.09 0.925 0.755	0 32.10 49.44 49.74 56.99 61.86 68.85	1824 1867 1986 2103		6 2 6 2 6 1	301 333 374 321 223 150	
93.8		78.	95%	68.1							
20 29.9 39.4 49.5	1.91 .54 .28 .07	20.2 29.9 39.5 49.7	2.62 2.03 1.62	19.6 29.5 40	2.57 1.98 1.54		alotos,	1908			
58.1 69.5	0.915 .794 .678	49.7 59.4	1.31 1.11	50.2 59	1.25 1.06	%	n	%		η	
82.2	.678	59.4 67.7 78.3	$0.96 \\ 0.815$	70.1 84.9	0.88 0.711		1002	20°	24	17	
88.2	4%	76.9		62	.5%	0 22.3 40.7	1002 1502	71.2 77.9 85.6 100.0	27	117 116	
20.1 29.85 39.5 49.9 59.5	2.41 1.39 1.52 1.24 1.05	20.1 29.6 40.1 49.5	2.62 2.03 1.59	19.9 30.5 40 50.5	2.40 1.81 1.45 1.17	50.4 62.2	1930 2188 2404	100.0	12	844 886	
65.7 76.2	0.812 0.953	59.6 69.7 81.2	1.31 1.09 0.92 0.772	57.6 68.6 78.7	1.02 0.848 0.733	Duns	tan and 1	Thole, 190	9		
83.3		7 5%			0%	%		η			
22.7 30.2	2.40 2.01	20.7 30.3	2.57 1.99	$\frac{21.4}{30.3}$	0.966 .799		20°	25°	30	0	
40.3 50.1 59.8 71.9 79.0	1.58 1.29 1.09 0.894 0.807	39.4 49.8 57.8 68 84	1.60 1.29 1.11 0.934 0.736	40.7 53.3 60.1 73.6 78.3	.656 .540 .497 .427 .408	0.00 19.88 35.17 60.80 80.00 99.15	1407 1742 2392 2675	891 1234 1529 2077 2319 1223	79 109 136 184 206 114	9 1 2 4	
Friedl	"nder, l	901									
%			η			Wils		dgwick, 1			
	25°									ter=1)	
0 59.60 81.49 99.85		21 23	001 03 322 75					18° 801 8658	1.230	56 42	
						Bing	ham, Whit	e and al.	, 1913		
Rudorf	, 1903					t	100 %	75 %	η 50 %	25 %	0 %
М	η	М		η		25 35	1148	2376	1893	1359	895.3
0.0 .319 .639 1.277	895 918 945 994	25° 2.5 5.1 10.2	55 1 11 1 22 1	1118 1351 1825		35 45 55 65 75 85 95	991.0 865.0 760.5 676.1 607.5 564.5 489.5	2376 1849 1482 1211 1011 856.9 741.8 642.3	1477 1138 976.5 821.6 700.7 603.1 530.2	1074 870.3 726.2 615.0 529.6 461.7 405.7	722.0 601.3 507.9 436.8 380.7 335.6 299.7
											=====

											
Mathe	ws and Co	ooke, 1	914				Spells,	1936			
t			η			-	Z	η	%	η	
	789	E						15°		·	
0 25 40 55 70	0 5064 25 2332 40 1569							1134 1368 1626 1897 2143 2416	60 70 80 90 100	2682 2935 3068 2786 1410	
Davis	and Jon	es, 191		vis, 1918			Classi	leva, 1946			
%	15°	25°	%	15°	n 25	o 	Grago	g 1946		η	200
0 10 20 30 40 50 60	1134 1368 1626 1897 2143 2416 2682	891 1059 1244 1446 1624 1818 2015	70 80 85 90 95 100	2935 3068 3033 2786 2243 1410	221 231 229 211 177 117	18 92 15 75	1224455	0 6.00 99.40 88.60 52.40 55.67	1006 1342 1666 2126 2156 228- 231:	5 2 3 3 5 6 6 7	30° 812.1 1262 1638 1665 1711 1760
Rabino %	owitsch, η(a	1921 cid=1) %	ě .	η (acid=	1)		27 28 89	50.93 53.80 70.80 75.50 78.00 52.00 99.40	234- 244- 256- 265- 268- 268- 254- 1330	5 8 8 2 1	1801 1909 1995 2040 2073 2083 2001 1139
1 5 10 20 30 40	0.82 .886 .979 1.171 .379	60 6 76 9 80 1 90	0	1.949 2.174 2.222 1.901 1.484 1.003			Vitagliano and Lyons, 1956				
50	.564 .75	2 10	0.00	1.000			<u></u>	D	N 250	D	
Swear	ingen and	1 Heck,	1934				17.3504 17.3258 17.3047 17.2826	1.075 .020 .013 0.9686	25° 17,193 17,093 16,893 15,864	38 .8 18 .7	47 25 62 56
mol%	35°	45°	η 55°	65°	75°	80°					
0 20 40	718 1303 1768	597 1095 1403	507 900 1132	436 760 932 980	380 648 783	357 595 724 759	Muscu	capillar	y K	capil	lary
50 55 60 80 100	1847 1848 1850 1524 1012	1449 1450 1433 1226 853	1180 1182 1163 1030 746	980 982 974 877 660	827 828 820 747 582	759 760 752 692 540	0 2 4 6 8 10 12 14	1.000 0.920 .860 .822 .789 .765 .743	15° 16 18 20 24 26 28 30	0.699 .679 .664 .638 .627 .616	

Forch, 1899	Morgan and Neidle, 1913
M (18°) t σ	% o % o
0.00268 18.05 72.85 0.0450 18.33 71.78 1.177 18.12 69.09 1.075 15.92 58.82 3.58 18.11 46.86 10.78 17.60 36.34 M = 1.075 20.21° (τ = 0.0013)	30° 0.000 71.030 40.11 39.374 1.000 67.756 49.96 37.109 2.475 63.995 60.05 35.035 5.001 59.435 69.91 33.099 10.01 53.500 79.88 31.026 14.98 49.451 90.04 28.677 20.09 46.455 100.00 25.725 30.09 42.269
Whatmough, 1902	t
% 0 % 0	10 74.01 45.763 38.684 33.819 - 20 72.53 44.956 37.878 32.916 26.701
18°	20 72.33 44.148 37.071 32.014 25.733 40 69.54 43.340 36.265 31.112 24.764
0 74.16 55 38.73 5 61.17 70 36.37 15 51.55 75 34.90 25 46.89 80 33.51 30 45.02 85 32.12 35 43.55 90 30.84 40 42.45 95 29.32 45 41.05 100 27.56	Faust, 1926 22° 50 mol % $\sigma = 34.0$
Drucker, 1905	22 30 mor ja 0 = 34.0
c o	Bennett, 1929
25° 35°	K o K o
2.175 66.20 65.35 5.991 59.85 59.05 10.980 53.50 53.05 19.240 48.55 47.90 41.480 40.75 39.95 51.82 38.35 37.75 65.24 35.65 34.80 83.07 31.60 30.85 91.33 29.35 28.55 93.48 28.25 27.40	20° 0 111.0 41.2 65.8 2.1 100.5 51.2 62.5 4.2 95.7 61.2 59.7 8.4 88.0 71.0 56.5 12.5 83.2 80.8 53.3 16.8 78.7 90.4 50.0 20.8 76.0 100 45.0 31.0 70.5
	In arbitrary units .
Grunmach, 1909	
20°	
0 75,23 67.80 31,45 10.6 56,63 78.03 28,26 20.3 48.30 87.60 26.98 43.9 35,27 97.50 24.97 50.22 35.01 99.70 23.11	

1045	Gerber, 1892 2 D n _D (sol-aq.) 2 D n _D 1sol-aq.)
Glagoleva, 1947	% D n _D (sol-aq.) % D n _D (sol-aq.)
20° 30° 0 72.53 71.03 16.03 47.68 45.90	0 0 39.6 0.0269 19.9 0.0072 49.5 0.0319 19.8 0.0144 59.4 0.0359 29.7 0.0209 79.2 0.0430
29.40 41.50 39.40 48.60 36.20 32.70 52.46 35.10 32.30 55.24 34.62 31.40 56.90 34.20 31.30	Zecchini, 1903
l 60 93 33.70 31.00 l	ŧ % ⁿ D t % ⁿ D
70.80 31.70 28.75 75.40 30.73 27.50 75.50 30.73 27.40 78.00 29.01 26.20 82.30 28.27 25.50	25.4 3.4754 1.33507 25.4 65.9568 1.37113 26.0 9.6857 .33908 25.6 65.9768 .37099 24.1 9.6968 .33921 25.7 99.5375 .36975 24.9 21.3943 .34649
92.68 99.50 22.42 22.60 18.83	Wagner, 1903
	g n _D g n _D
Optical and electrical properties Le Blanc and Rohland, 1889 and 1896 n 20° 1.33325 18.19 .34619 18.70 .34658 40.38 .36039 100.00 .37255 Buchkremer, 1890 n 20° 1.33313 51.029 1.36590 5.216 .33684 56.242 .36858 9.727 .34012 61.947 .37113 14.944 .34380 67.046 .37313 20.207 .34741 72.222 .37496 26.213 .35138 79.282 .37664 32.124 .35522 84.511 .37722 37.398 .35843 88.519 .37717 43.491 .36209 .92.536 .37640	0 1.33320 24.039 1.35021 0.513 33358 24.644 35058 1.026 33397 25.229 35095 1.538 33435 25.814 35132 2.051 33474 26.400 35169 2.564 33513 26.985 35205 3.085 33551 27.570 35242 3.606 33590 28.155 35279 4.127 33628 28.740 35316 4.648 33667 29.325 35316 4.648 33667 29.325 35316 4.648 33667 29.325 35352 5.169 33705 29.910 35388 5.690 33743 30.520 35425 6.211 33781 31.130 35461 6.732 33820 31.740 35497 7.253 33858 32.350 35533 7.774 33896 32.960 35569 8.299 33934 33.570 35569 8.299 33934 33.570 35660 8.299 33934 33.570 35678 9.874 34048 35.400 35786 10.924 34124 36.630 35786 10.924 34124 36.630 35786 11.449 34162 37.250 35882 11.974 34199 37.870 35888 12.499 34237 38.490 35894 13.624 34275 39.110 35930 14.652 34388 40.970 35888 15.194 34426 41.590 36074 15.737 34463 42.210 35930 16.822 34537 43.506 36181 17.364 34575 44.154 36.23
45.696 .36362 100.000 .37265	19.010 .34687

Grunmach, 1909	Kohner and Gressmann, 1927
g Dn .10 ⁵	wt% mol% nHe y
n _F - n _C	25°
43.90 647 50.22 658 67.80 673 78.03 684 87.6 676 97.5 677 99.7 663	11.7012 3.62 1.34068 24.5360 8.38 .34926 39.1935 15.44 .35810 49.5950 21.81 .36366 66.6320 36.14 .37117 74.027 44.68 .37359 84.654 60.99 .37550 97.303 91.05 .37269
[∞] n _D	99.105 96.50 .37089
20°	
43.90 1.36161 50.22 .36415	Waring, Steingiser and Hyman, 1943
67.80 .37363 78.03 .37563	mol% n _D mol% n _D
87.6 .37691 97.5 .37471 99.7 .37266	25°
77.1 .37200	0.0 .3325 45.15 1.3734 10.75 .3522 59.08 .3764
	19.19 .3635 83.05 .3754 26.21 .3655 99.08 .3700
Guerdjikova, 1910	33.37 .3700
% ⁿ D	
25°	
0 1.33255 12.868 .34170 30.444 .35350 48.577 .3640 66.640 .3724 97.12 0 .3701	Guillaume, 1946 t n 5780 7.20 20 1.3394 14.55 18.5 3452
Elsey and Lynn, 1923	14.55 18.5 .3452 30.80 20 .3546 100.00 20 .3763
% n _D % n _D	
25°	Perkin, 1886
2.48 1.33427 19.33 1.34579 4.52 .33569 21.07 .34694 6.69 .33720 23.32 .34838 8.51 .33848 25.00 .34949 10.74 .34001 26.90 .35068 13.23 .34172 28.85 .35187 15.24 .34308 28.93 .35226 18.06 .34493	50 mol % 18° (α) = 0.8801
	Humburg, 1893
	% (α)mol % (α)mol magn.
	16°
	0 1.000 18.204 2.451 7.766 2.487 39.077 2.4593 12.780 2.405 100.000 2.4746

Oppenheimer, 1898	Otten, 1887
% (α) _{magn} .	% и а 10 ⁵ b. 10 ⁸
16.37 20.5° 0.761	0°
23.53 30.50 .761 .762	4.33 7.973 2887 -9173 9.79 9.983 2936 -8453 20.79 10.547 3009 -6589 30.46 8.957 3065 -5578
Guerdjikowa, 1910	37.80 7.284 3237 -12094 49.37 4.881 3063 +122 58.32 3.133 3099 +797 67.50 1.775 3330 +776
$\%$ (α)mol. $\%$ (α)mol. magn.	90.87 1.355 4360 -8124
25° 0 5.068 48.577 4.499 12.868 4.782 66.640 4.312 30.444 4.745 97.120 3.823	Whetham, 1897
	8 н % н
Guillaume, 1946	18° 100.0 0.0141 60.21 5.222 97.85 .0314 53.16 7.27
% t (a)*,106	95.78 .0588 47.59 9.28 93.80 .0881 43.07 10.76
5780	JJ 91.90 _1396 33.53 14.08 /
7.20 20 3.916 14.55 18.5 .851	88.33 .2355 15.86 17.07 85.02 .5073 11.78 16.08
30.80 20 .701 100.00 20 .013	81,95 .8013 7.75 14,86 75,17 1,7360 3,88 11,37 69,42 2,8360 1,94 8,39
in radians, gauss, centim.	07,42 2,000 1,74 0,07
Kohlrausch, 1876	Jones, 1904 and Jones and Getman, 1904
% и т	M λ M λ
	0°
0.30 3.15 - 1.05 5.95 - 5.00 12.20 0.0163 10.04 15.81 .0169 20.00 15.99 .0179 29.93 13.97 .0186 39.97 10.87 .0196	0.1 3.07 5.0 0.19 0.5 1.33 6.0 14 1.0 0.85 7.0 10 2.0 0.52 8.0 .07 3.0 0.35 10.0 .04 4.0 0.25
47.80 8.08 .0192 61.40 4.18 .0208 76.40 1.24 .0210 99.70 0.0004	

	1500Kg/cm ²	
Grünmach, 1909	0 58.7 49.5 53.4 - 20 52.2 51.5 49.5 52.5 40 56.4 52.7 50.6 50.8	42.9 46.0 52.2
% κ τ.10 ⁵	2000Kg/cm ²	
20° 43.90 9.748 1972 50.22 7.492 2008 67.80 2.621 2082 78.03 0.9528 2105	0 79.9 68.3 72.4 - 20 70.8 69.2 65.6 66.6 40 69.3 68.8 67.8 69.2	56.5 60.8 70.7
78.03 0.9528 2105 87.60 0.2154 2115 97.50 0.01562 2118 99.60 0.000542 2118	2500Kg/cm ² 0 107.3 89.4 92.3 - 20 90.1 86.6 82.9 84.8 40 86.6 86.9 85.5 87.3	68.1 74.5 88.6
	3000Kg/cm ²	,
Wilson and Sidgwick, 1913	0 123.2 109.2 112.8 - 20 105.3 102.0 101.2 102.0 40 105.8 106.6 104.5 106.2	78.6 90.9 107.5
N x N x	100.0 100.0 100.2	
18° 0.002807 0.7597 0.1702 5.990 0.004462 0.9590 0.4480 9.462 0.007703 1.2700 0.8118 12.11 0.02246 2.1870 1.599 15.04 0.03470 2.7220 2.939 16.38 0.07273 3.9100 4.143 15.76	Eichelberger and La Mer, 1933	
.07273 3.9100 4.143 15.76	я н я н	
	25°	
Rabinowitsch, 1921	17.8 16.11 10.1 14.92 23.7 13.92 16.8 16.13 31.6 13.33 21.0 15.88 42.2 9.34 26.2 14.92	two series)
% к % × 18°	75.0 1.36 41.0 10.42	
0.3 3.18 60 4.56 1 5.84 70 2.35 5 12.25 80 0.81 10 15.26 90.87 0.24	100.0 0,00014 51.2 7.00 64.0 3.46 80.0 0.77	
10 15.26 90.87 0.24 20 16.05 95.92 0.004 30 14.01 99.70 0.0004 40 10.81 50 7.40		
7.40	Thwing, 1894	
	% с % с	
Tammann and Tofaute, 1929	15°	
(DA/\lambda).100 t 1.0N 2.0N 4.0N 5.52N 10.19	0 75.50 70 39.48 30 64.20 74 36.62 40 61.79 77 36.87 50 60.80 80 22.90 60 60.80 100 10.30	
500Kg/cm ² 0 19.7 16.1 17.8 - 13.3 20 17.1 16.3 14.9 15.2 15.6 40 16.8 16.0 16.0 16.4 17.5	62.5 61.25 (2+1) (1+1)	
1000Kg/cm ²		
0 38.5 32.3 35.5 - 27.2 20 34.6 34.1 32.5 31.9 30.7 40 33.3 33.9 33.5 32.8 34.4		· ·

	Heat constants.				
Smith and Smith, 1918					
χ. χ.	Marignac, 1876				
2 0 °	mol% U mol% U				
0 0.714 20.5 .680 40.0 .641 60.5 .596 80 .560 100 .520	21 - 52° 0.5 0.9374 3.9 0.9157 0.9 .9769 9.1 .3220 2.0 .9568 16.7 .7320				
Sibaiya and Venkataramiah, 1933	Reiss, 1880				
	% U % U				
	70°				
at room temp. 0 0.720 70 0.553 10 .704 80 .565 50 .650 90 .577 60 .629 100 .580 Pacault and Chedin, 1950	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				
% X % X					
15° 0 0.720 60.0 0.607 10.7 .697 70.0 .539 19.9 .683 80.0 .568 30.0 .665 90.0 .548 41.3 .645 100.0 .523 50.0 .626 Feneant, 1952 Raman spectra (see author)	Ludeking, 1386 50 - 20° 0 1 40.0 0.8047 6.2 0.9695 45.4 .7781 7.7 .9624 52.6 .7431 10.0 .9511 62.5 .6949 14.3 .9303 69.0 .6633 18.2 .9112 76.9 .6245 25.0 .3789 36.9 .5755 29.4 .3564 100.0 .5113				
	Sandonnini, 1913				
	% U % U				
	16-18° 3.38 0.996 50.03 0.777 7.47 .986 64.86 .708 14.39 .982 69.39 .687 21.13 .922 79.42 .633 29.69 .880 94.31 .532 34.02 .845 97.03 .520 46.43 .795				

				
Bury and Davies, 1932	Water + Propionio	acid ($C_3H_60_2$)		
% U % U				
15,5-16,5°	Heterogeneous equi	libria		
5.205 0.9801 24.40 0.3946 10.21 ,9602 29.67 .3686				
15.01 .9399 34.22 .3432	Konovalov, 1881			
19.76 .9194	t p	t p	t p	
	24.92%	49.37%	75.68%	
	16.85 14.1 1	5.95 12.8 6.35 73.25	17.3 13.75	
Bussy and Buignet, 1864	62.90 167.7 6	6.35 73.25 4.0 173.8	46.7 69.6 63.4 151.4	
% t Dt	99.25 746.9 8	4.0 173.8 0.2 229.5 1.5 379.3 0.0 523.6	81.45 336.7 99.6 676.35	
33.5 mol % 17.1 -2.50	9	9.5 739.6		
50 vol % 16.0 -1.20				
	0.7		1	
	0thmer, 1943		b.t.	
Faucon, 1910	% L	v	D. L.	
% Q mix. % Q mix.	100	100	141.4	
93 -56.00 53 -26.82	98 95	90.0 88.0	138.0 117.2	
35 -79.95 40 -12.25 80 -78.30 30 +1.88	90 80	63.0	109.0 104.2 102.2 101.1	
75 -70.63 20 +4.68 70 -61.54 10 +2.98	70 60	45.5 44.0 25.1		
63 -44.21 5 +1.66	50 40	19.5 15.6	100.4 100.0	
	38	12.5 9.7	99.7 99.1	
	ĩỏ 5	6.8	99.6 99.8	
Sandonnini, 1913	20 10 5 2	5.2 2.7 0.0	99.9 100.0	
	<u> </u>			
% Q mix % Q mix cal/100gr. cal/100gr.				
16-13°	Lecat, 1949			
(% b.t.	Dt min.		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	17.7 99.98	+0.45 Az		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100.6 141.30			
34.02 +4.7 97.03 -34.1 46.43 -71.7				
	Ab 1204			
	Abegg, 1394	f.t.		
	M			
	0.366 1.732	-1.61 -3.235		
	3.292 4.415	-5.86 -7.36	l l	

Ballo, 1910	
% f.t. % f.t.	Properties of phases
0 0 78,85 -23.7 20.33 -3.4 84.82 -28.3 33.63 -6.5 90.62 -28.2 42.22 -6.5 95.08 -26.7 49.36 -8.8 97.15 -24.8 57.37 -10.0 98.66 -23.6 64.61 -13.6 98.96 -23.6 70.14 -16.5 100.00 -23.6	Lüdeking, 1886
Faucon, 1910 mol% f.t. mol% f.t.	3.3 1.0000 21.5 .0130 3.6 .0003 29.1 .0165 3.9 .0004 33.9 .0184 4.4 .0008 40.6 .0204 4.8 .0012 45.1 .0207 5.6 .0018 50.7 .0220 6.4 .0026 57.8 .0195
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	6.4 .0026 57.8 .0195 7.6 .0039 67.3 .0182 8.3 .0038 73.3 .0167 9.3 .0045 80.4 .0128 10.5 .0055 89.1 0.9947 12.0 .0065 100.0 0.9873 14.1 .0082
39.85 -8.30 90.85 -27.60 45.20 -9.20 92.40 -26.90 50.00 -10.10 94.75 -25.40 59.92 -12.50 97.22 -23.90 65.88 -14.20 99.09 -21.40 100.00 -19.30	Perkin, 1886 mol% d 15°
Jones and Bury, 1927	100 0.99746 50 1.02389
m f.t. m f.t.	d 4° 25°
0.2936 -0.544 1.789 -2.978 .3126 .577 2.093 3.411 .4211 .771 .134 .474 .5271 .955 .352 .771 .5686 1.025 .482 .948 .6606 .187 .676 4.196 .8964 .582 .814 .357	50mo1% 1.03448 1.01450
9987 756 873 434	0 1007
301 2.238 .412 5.054	0tten, 1887 % d % d
.490 2.531 .869 5.528 .639 -2.753 .933 -5.583	18°
Hansen, Miller and Christian, 1955	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
mol% lg a mol% lg a	
0 0 60 0.19 20 0.05 80 0.44 40 0.14 100 0.80	
a = activity coefficient	

Charpy, 1893	Zecchini, 1905
% d % d	t % d
0° 0 0.9987 66.7226 1.0414 17.0822 1.0156 83.3827 1.0432 33.5060 1.0259 100 1.0372 49.8829 1.0349	19.9 8.0930 1.00580 19.8 23.7180 .01750 19.6 62.1330 .02511 18.7 68.2130 .02424 18.7 98.0120 0.99403 19.8 97.7850 .99382
Humburg, 1893	Tsakalatos, 1908
% d	- % d % d
16° 0 0.9990 10.332 1.0085 35.5575 1.0253 100 0.9973	20° 0 0.9982 79.3 1.020 34.6 1.022 90.0 1.012 68.9 .025 100.0 0.9945 74.2 .023
Le Blanc and Rohland, 1896	Turbaba, 1890
% d	mol% a.107 b.109
20°	1 262 5533
0 0.9982 12.92 1.0074 14.69 1.0111	$ \begin{array}{cccc} 2 & 940 & 5130 \\ 4 & 2120 & 4431 \end{array} $ $ \begin{array}{ccccc} Vt & (0 - 30^{\circ}) = 1 + at + bt^{2} \end{array} $
Drude, 1897	Tsakalotos, 1908
% d % d	7 7 % n
17° 0 0.9988 86.0 1.0185 50.3 1.0283 89.9 .0140 56.3 .0285 92.9 .0103 62.5 .0281 96.1 .0050 68.5 .0277 97.5 .0026 74.4 .0258 99.0 0.9994 80.0 .0231 100.0 0.9969	0 1003 79.8 2973 34.6 1982 90.0 2622 68.9 2752 100.0 1114
80.0 .0231 100.0 0.9969	Drucker, 1905
Drucker, 1905	c d 25° 35°
c d c d 25° 35° 25° 35°	0.9883 65.40 64.50 1.914 60.60 59.80 5.842 49.75 40.35 9.824 44.50 43.80
0 0.99707 0.99409 21.71 1.01387 1.00844 0.9383 .99787 .99469 49.80 .02266 .01449 1.914 .99877 .99551 73.92 .02174 .01027 5.842 1.00205 .99831 99.99 0.98958 0.97876 9.824 1.00552 1.00131	21.71 36.90 36.40 49.80 32.15 31.65 73.92 30.10 29.50 99.99 26.05 25.20

Damien, 1881	
% n Hα Hβ Hr	Perkin, 1886
0 1.33108 1.33706 1.34035 10.81 .33911 .34557 .34930	50 mol% 19.40° (α)magn. = 0.9012
20.72 .34637 .35282 .35656 30.77 .35321 .36024 .36413 41.49 .35878 .36569 .36972 51.81 .36374 .37070 .37478 57.14 .36594 .37272 .37653 62.50 .36835 .37520 .37915 68.97 .37120 .37810 .38203 72.73 .37271 .37975 .38355 76.92 .37473 .38169 .38550 81.63 .37563 .38245 .38636 86.96 .37624 .38300 .38696 93.02 .37431 .38121 .38493 100.00 .37022 .37680 .38507	Otten, 1897 % x a.10 ⁵ b.10 ⁸ 0° 10.078 7.4137 2848 -6825 30.034 5.1546 3215 -3424 50.092 2.3005 3504 -527 69.991 0.5112 3520 +4153
Le Blanc and Rohland, 1896	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
[™] n _D	*t = 10 CTAC SC
20°	
0 1.3333 12.92 .3441 14.69 .3462	Humburg, 1893 (α) mol magn.
	0 16° 1.000
Drude, 1897 % np % np	10.332 3.455 35.5575 3.4229 100 3.4833
% n _D % n _D	3,400
0 1.3335 86.0 1.3891 50.3 .3730 89.9 .3899 56.3 .3764 92.9 .3897 62.5 .3798 96.1 .3891 68.5 .3830 97.5 .3885 74.4 .3858 99.0 .3879 80.0 .3878 100.0 .3872	Drude, 1897 % ε % ε 17°
Zecchini, 1905	0 81.7 86.0 14.22 50.3 46.3 89.9 10.92 56.3 41.5 92.9 8.55 62.5 35.2 96.1 6.13 68.5 29.6 97.5 5.01 74.4 24.0 99.0 3.80
≰ t n _D	80.0 18.9 100.0 3.15
8.0930 19.9 1.34044 23.7180 19.8 .35397 62.1330 19.6 .38004 68.2130 18.7 .38439 98.0120 18.7 .38819 97.7850 19.8 .38760	

Heat constants	Water + Butyric acid ($C_{ m u}H_8O_2$)
Ludeking, 1886	Heterogeneous equilibria
76	
50 - 22° 7.6 0.9639 45.1 0.7857 9.3 .9557 50.7 .7592 12.0 .9427 57.8 .7254 17.0 .9190 67.3 .6805 21.5 .8978 73.3 .6520 29.1 .8616 80.4 .6179 33.9 .8388 89.1 .5765 40.6 .8069 100.0 .5227	Othmer, 1943 mol% mol% L V L V at b.t. 100 100 40 9.2 98 84.0 30 8.6
Bury and Davies, 1932 % U % U	95 60.5 20 8.4 90 42.3 15 7.9 80 23.8 10 7.1 70 16.6 5 5.2 60 12.2 2 2.9 50 10.0 0 0.0
13.5 - 16.5° 3.534 0.9922 19.33 0.9474 7.072 .9855 22.59 .9336 10.00 .9776 25.38 .9199 12.08 .9713 30.21 .8971 16.03 .9590	Faucon, 1910 % p 0° 18.2° 58.7°
Faucon, 1910 ### Q mix ### Q mix 8°	0 4.57 15.520 140.11 10 4.50 15.198 142.04 25 4.37 14.746 143.01 35 4.18 14.101 140.94 60 3.79 12.424 134.95 75 2.96 10.240 123.21 85 2.26 9.200 123.21 100 0.12 0.700 9.50
5 -299.1 70 -627.3 9.7 301.7 80 588.1	Konovalov, 1881
22 353.5 85 546.5 30 427.7 90 479.4 50 561.5 95 -334.5	t p t p t p
60 -603.5	25.48% 50% 70.1% 18.3 15.15 15.0 14.2 19.45 16.4 49.85 90.4 31.25 35.6 50.20 90.8 80.5 364.9 42.75 65.5 80.45 351.3 99.7 766.4 52.25 109.4 100.00 740.8 60.35 152.3 70.3 237.3 79.6 350.8 99.0 741.1
	Ryland, 1899 % b.t. 763mm
	20 99 - 99.5 Az 100 159 -160

Lecat, 1949	Howard and Patterson, 1926
% b.t.	C.S.T. : 26% -1.2° to -1.05°
91.6 99.4 Az 0 164	
	D.44
Rothmund, 1898	Patterson, 1938 % sat.t. % sat.t.
C.S.T. = -3.5°	20.0 -6.70 35.9 -1.60 23.4 -3.20 36.9 -1.67
	23.4 -3.20 36.9 -1.67 23.5 -2.20 37.5 -1.70 24.4 -2.18 40.5 -1.90 26.1 -2.05 43.4 -1.92
Timmermans, 1906	27.6
% sat.t. % sat.t.	29.5 -1.65 54.6 -5.00 31.4 -1.60 55.7 -5.20
23.33 -5.1 45.29 -2.3 27.69 -3.3 52.92 -3.5	67.6 -14.70
34.91 -2.3 63.02 -6.9	Ballo, 1910
	% f.t. % f.t.
Faucon, 1910	0 0 89.24 -10.4 12.64 -1.45 92.86 -8.5
% sat.t. % sat.t.	12.64
25.0 - 5.2 40.0 - 3.8 30.0 - 4.2 50.0 - 4.5 35.0 - 4.0 58.2 - 7.0	74.73 -3.6 100.00 -4.5 83.68 -7.1
مرود الدين المحكم الدين في حد الدين الدين الدين الدين الدين المواقع الدين الدين الدين المواقع الدين ا	
De Mo1, 1925	Faucon, 1910
# sat.t. f.t. E 10.52 -	% f.t. % f.t.
15.42.6 - 19.92.7 - 22.3 -7.50 -2.7 - 22.7 -6.90 -2.7 - 23.4 -6.20 -2.7 - 24.9 -5.25 -2.7 - 27.3 -4.45 -2.7 - 31.6 -3.80 -2.7 - 35.0 -3.40 37.0 -3.30 -2.7 - 44.5 -3.20 51.0 -4.05 -2.8 - 54.0 -5.10 55.3 -5.40 -2.9 - 55.3 -5.40 -2.9 - 58.7 -7.20 61.9 -9.70 -3.1 - 64.83.3 - 66.53.4 - 70.23.7 - 74.44.8 - 76.35.4 -	0.00
80.47.5 87.010.6 -12.10 87.510.9 -12.10 88.411.45 -12.10 90.011.3 -12.10 91.711.6 -12.10 93.99.2 -1 100.05.55 -	

Lüdeking, 1886
7.0 1.0000 55.0 .9936 8.1 .0005 62.0 .9909 9.8 .0007 70.9 .9857 10.9 .0009 76.5 .9824 12.2 .0015 83.0 .9780 14.0 .0015 90.7 .9697
16.3 .0016 100.0 .9521
Hartwig, 1888
9.68 1.0062 19.43 .0077 35.82 .0067 100.00 0.9620
Otten, 1887 % d % d 18°
1.002 1.0012 30.040 1.0072 5.024 .0036 50.041 1.0035 10.067 .0061 70.014 0.9962 15.029 .0075 89.971 .9808 20.011 .0077 100.000 .9649
Humburg, 1893 % d 16° 0 0.9990 12.6299 1.0069 24.5020 .0056 35.0900 .0042 100 0.9633

Charpy, 1893	Grind	ley and Bu	ry, 1929			
% d % d	%			d		
0°	. ~	0°	12°	18°	25°	34.94°
0 0.9987 47.3670 1.0115 11.8823 1.0091 59.3432 .0100 23.6160 .0117 71.3156 .0042 35.5461 .0121	0 4.905 7.505 10.01 11.74 13.94	0.99987 1.00379 .00587 .00785 .00912 .01045	0.99953 1.00250 .00408 .00546 .00631 .00707	0.99862 1.00122 .09256 .00371 .00436 .00491	0.99707 0.99930 1.00033 .00127 .00173 .00207 .00214	0.99408 .99577 .99657 .99713 .99736 .99745
Le Blanc and Rohland, 1896	13.94 15.59 17.39 19.21 20.86	.01124 .01177 .01213 .01240	.00746 .00766 .00777 .00781	.00517 .00522 .00521 .00516	.00207 .00196 .00179 .00135	.99714 .99688 .99657 .99594
% d	23.85 26.93 30.07	.01264 .01274	.00769 .00748	.00489 .00453	.00082	.99520
20° 0 0.9982 13.37 1.0032 17.09 1.0053	35.05 40.06 45.31 50.13 54.09	.01274 .01277 .01270 .01251 .01221 .01177 .01130	.00719 .00662 .00591 .00502 .00406	.00409 .00327 .00233 .00120 0.99996 .99887	.00021 0.99913 .99793 .99651 .99506 .99374	.99435 .99294 .99138 .98959 .98781 .98622
	58.08 60.23 61.93 63.32 66.00 70.02	.01066 .01026 .00986 .00954 .00880	.00210 .00145 .00090 .00045 0.99949 .99774	.99767 .99692 .99629 .99578 .99465 .99230	.99234 .99147 .99078 .99016 .98848 .98695	.98453 .98356 .98272 .98206 .98070 .97845
Drucker, 1905	74.07	.00573 .00372	.99566 .99336	.99057 .98812	.98452 .98194 .97917	.97580 .97306
25° 35°	81.56 85.96 90.95	.00140	.99080 .98711	.98546 .98163	.97521	.97010 .96598
0 0.99707 0.99409 0.1394 .99706 .99414	90.95 95.62 100.00	.99310 .98715 .97844	.98191 .97561 .96642	.97626 .96983 .96045	.96968 .96312 .95356	.960 30 .95351 .94367
.3135 .99725 .99418 .7263 .99727 .99437 1.0460 .99750 .99442 2.2680 .99809 .99487 3.8330 .99880 .99543 8.6320 .99081 .99687	Irany Vol%	, 1944 mo1%	d	vo1%	mo1%	d
24.9600 1.00114 .99543 79.3800 0.93054 .97047	101/		200	<u>. </u>		
100 0.95356 .93566	0.0 7.0 15.2 30.0	0.0 1.5 3.4 7.8	0.9982 1.0052 1.0074 1.0068	70.1 83.0 90.0 100.0	31.6 49.7 66.4 100.0	0.9952 .9860 .9790 .9630
Tsakalotos, 1908	50.0	16.5	1.0016			
% d % d						
20°	Turk	aba, 1890				
0 0.9982 74.6 0.9889 29.5 1.0060 82.2 .9856	mol%	[a.]	107	b.109		
29.5 1.0060 82.2 .9856 49.0 0.9986 89.1 .9779 68.2 0.9933 100.0 .9652	1 2 4	37 113 275	70 34 58	5520 4931 3730		
	V ₁	(0 - 30°) = 1+at+	-bt ²		

	Irany, 1944
Tsakalotos, 1908	vol% mol% n vol% mol% n
% n % n	20°
20° 0 1003 74.6 3576 29.5 2189 82.2 3404 49.0 3096 89.1 3015 68.2 3560 100.0 1585	0.0 0.0 1005 70.1 31.6 3710 7.0 1.5 1310 83.0 49.7 3600 15.2 3.4 1640 90.0 66.4 3250 30.0 7.8 2410 100.0 100.0 1780 50.0 16.5 3240
Bury and Grindley, 1936	Drucker, 1905
β η 0° 12° 25° 35°	с σ с σ 25° 35° 25° 35°
0 1794 1239 895 721 3.002 2020 1369 973 777 6.024 2271 1512 1065 844 9.070 2537 1665 1152 911 12.02 2815 1818 1248 979 14.97 3069 1966 1344 1048 17.49 3317 2112 1440 1120 20.12 3569 2234 1550 1201 23.73 3987 2521 1695 1308	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
23.73 3987 2521 1695 1308 27.93 4520 2815 1881 1445 31.78 4966 3077 2033 1563 36.33 5500 3361 2222 1695 39.81 5860 3572 2365 1796 42.87 6090 3730 2463 1873	Le Blanc and Rohland, 1896
42.57 6990 3730 2793 1875 50.10 6530 4070 2699 2049 55.0 6710 4245 2823 2150 60.3 6900 4394 2941 2243 65.2 7030 4528 3039 2322 69.3 - 4623 3121 2392 73.3 7100 4627 3129 2415 77.1 7040 4612 3126 2415	20° 0 1.3333 13.37 1.0032 17.09 1.0053
81.4 6830 4525 3095 2398 84.6 6540 - 3032 2358 85.8 6380 4295	Humburg, 1893 « (α)mol magn.
# η # η -3° -3° 0°	16° 0 1.0000 12.6299 4.5021 24.5020 4.5222 35.0900 4.5506
33,92 6220 59.8 7850 7850 7850 7850 7850 7850 7850 785	100 4.5465
39.99 6990 72.3 8010 7110 41.45 7040 74.5 7970 7080 44.91 7260 78.9 7810 6970 49.95 7510 84.6 7310 6540	Otten, 1887
	% x a.105 b.108
	5.024 5.9579 2587 -8184 10.067 6.7215 2703 -8912 15.029 5.7934 3036 -10115 20.011 4.4948 3104 -7571 50.041 1.8757 3239 -5112 70.014 0.3348 3648 +2003
	$n_{t} = k_{0} (1+at +bt2)$

Hartwig, 1888	Heat constants
% % 0° 18° 30°	Bury and Davies, 1932
9.68 3.680 5.568 6.931	g u g u
19.43 5.982 8.954 11.077 35.82 6.548 10.811 13.896	13.5 - 16.5°
35.02 0.540 10.511 15.070	4.065 0.9945 14.92 0.9714
	6.857 .9893 15.74 .9660 8.998 .9864 16.95 .9608
Hartwig, 1891	10.03 .9853 20.03 .9443 10.95 .9838 20.98 .9397 12.05 .9803 24.30 .9226
% τ.10°s λ	12.95 .9781 28.26 .9029
18°	13.56 .9764 29.29 .8968 14.66 .9723
9.68 36.1 1.0219 19.43 35.2 0.4151	
35.82 31.1 0.1421	
	Faucon, 1910
Grindley and Bury, 1930	% Q mix. % Q mix.
g x	90
0° 25°	5 -1.84 70 -161.2 10 -4.81 75 -184.9
1,212 3,459 5,374	20 -14,42 80 -207,6 40 -48,30 85 -227,4
2.982 5.055 7.934 4.740 5.018 9.364	57 -102.0 90 -230.1 61.5 -122.6 95 -190.9
6.246 6.355 10.154 6.878 6.530 10.371 8.403 6.681 10.741	
8.403 6.681 10.741 10.48 6.780 10.984	
10.48 6.780 10.984 13.00 6.700 10.929 15.12 6.512 10.742	
17.58 6.237 10.338 19.37 6.027 10.073	
22.08 5.685 9.656 26.42 5.056 8.655	
30.48 4.422 7.694 34.25 3.875 6.692	
¶ 37,73 3.373 5.872	
41.01 2.932 5.132 44.54 2.501 4.362 47.61 2.121 -	
51.13 51.33 54.87 1.3485 2.386	
1 58.44 1.0281 1.8424	
61.20 0.8059 1.4495 64.32 0.5901 1.1000	
67.25 0.4465 0.8170 69.21 0.3253 0.6555	
70.92 0.2809 0.5251 73.65 0.1780 0.3778	
75.75 0.1457 0.2769 78.88 0.0851 0.1692	
82.02 0.04862 0.0948 86.17 0.01885 0.03787	
90.58 0.00547 0.01126 95.63 0.00058 0.00105	
100.00 0.00058 0.00039	

				6 H 6)		Tasks	10+00 10	100			
я	r + Isobu rogeneous	•		C4H8O5)		1 Saka	lotos, 19	sat.			
<u> </u>	s, 1911										
#01e			p		400	- 23.3 30.5 32.7		21. 23. 23.	5 5		
<u> </u>	20°	25°	30°	35°	40°	-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		23. 21.	7		
0 11.51 21.70 30.00 47.50	17.64 18.35 18.75 18.65 18.65	23.69 24.70 25.10 24.80 24.80	31.8 32.9 33.0 33.1 32.9	41.8 43.3 43.6 43.7 43.7	55.1 56.8 57.3 57.3 57.3 57.1		on, 1910				
65.00 78.20 90.00	18.60 18.55 16.50	24.70 24.70 21.35	32.9 32.9 27.1	43.5 42.9 37.9	57.1 54.9 50.0	L ₁	L ₂	sat.t.	% L1	Lş	sat.t.
90.90 100.00	15.20	20.30 1.55	24.8 2.16	2.95	4.12	14.91 20.62 29.97	85.09 79.38 70.03	-5.20 +18.90 24.00	60.12 70.10 72.08	39.88 29.90 17.92	17.90 10.40 0.70
Roth	mund, 18 9	8				35.60 39.80 50.25	64.40 60.20 49.75	24.70 24.40 22.10	86.44 97.21	13.56 2.79	-3.60 0
78	sat.t		%	sat.t.		====					
15.81 20.00	-0.10 +17.05 21.22	•	49.82 57.20 62.57	+21.57 18.30		Moles	, 1911				
24.73 27.06 34.00 42.13	22.20 24.32 +23.60		70.23 74.32	15.05 8.37 +4.40		C.S.T	. = 17.8°	=			
====						_ Howar	d and Pat	terson, 1	926		
Smir	no ff , 190	7				C.S.T	`.: 30%	17.50°	- 17.95°		;
<u>%</u>	sat.t.		%	sat.t.							
1 St	sample 7.40	,		ample		Krichn	ian, 1935				
18.72 19.29 20.28	9.00 10.65]	7.82 9.04 9.83	10.05 14.05 15.85		L ISM	ian, 1900				
21.47 23.97 24.29	12.42 14.47		22.70 25.15 28.50	19.85 21.65		c.s.	T.: 50%	25.5°			
24.65 26.70	14.62 14.75 15.47		30,25	22.85 23.15		Mole	cular clu	stering			
29.59 32.67	15.72 15.57	3	3.86 8.30	23.25 23.15		t	$\mathbf{p_h}$	p_{V}	P _u		
39.04 44.51	14.47 13.34	5	2.07 1.40	23.15 22.85 21.55				50%			
48.37 50.76	12.42 11.79		2.45 9.08	$\frac{15.85}{10.05}$		40.0	100	$\substack{1.8\\1.5}$	3.4		
55.12 59.81	10.27					37.5 35.0 32.5	90 81 70	1.3	3.1 2.7	,	
64.18	5.15 4.55					30.0 28.0	59 53 39	0.7 0.6	2.4 2.0)	
====	4. 00					26.0 26.0 25.5	39 27	0.5 0.34	1.8 1.5 1.5	; ;	
	10.45					- [tal polari			
	, 1949		.			и .		polarisa]
- %	b.	τ.	Dt	min.		P _u -	unpolari	sed light			
10 21 100	99 154		•	-0.4 Az							
						.][

7 1026	D 1010
Rousset, 1936	Faucon, 1910
C.S.T. : 36% 25.50°	% f.t. % f.t.
Patterson, 1938	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
% sat.t. % sat.t.	35.60 -2.95
20.5 15.20 35.97 21.79 24.8 20.25 38.60 21.54 26.3 20.90 42.10 21.20 28.25 21.50 49.00 20.15 31.35 21.90 49.70 20.01 33.24 21.89 58.10 17.00 35.95 21.76	Properties of phases
C.S.T. : 32% 21.90°	Friedlander, 1901
	t d t d t d
	0% 19.99% 24.25%
Quantie, 1954 C.S.T.: 37.4% 26.5°	14.12 0.9993 17.88 1.0036 23.18 1.0002 20.12 .9982 18.48 .0034 23.73 0.9999 25.90 .9969 20.08 .0027 24.67 .9994 31.83 .9952 24.96 .0004 27.89 .9977 37.77 .9932 32.97 0.9964 33.99 .9945 45.08 .9904 42.32 0.9912 42.15 .9898 33.32% 36.3% 38.6%
Rabinovich, Fedorov and al., 1955 (fig.)	25.82 0.9956 25.94 0.9944 25.92 0.9937
t mol% L ₁ L ₂	26.37 .9953 26.51 .9941 26.50 .9933 27.47 .9947 27.59 .9935 27.75 .9926 30.47 .9930 30.54 .9918 30.36 .9910 35.50 .9900 35.52 .9888 35.36 .9880 42.26 .9858 42.33 .9843 42.62 .9833
-2 4 44 +5 4.5 37 15 5.5 27	41% 49% 59.93%
15 5.5 27 20 6 21 25 11 11	25.87 0.9927 25.28 0.9897 20.99 0.9879 26.39 .9924 25.77 .9894 21.49 .9875 27.47 .9917 26.87 .9887 22.50 .9867 30.45 .9899 30.78 .9861 26.46 .9838 35.46 .9867 35.91 .9825 33.41 .9786 42.20 .9822 42.29 .9779 42.32 .9715
Timmermans and Kohnstamm, 1910	100% 14.66 0.9535
C.S.T. limits of pressure dt/dp 23.2 1 - 195 Kg -0.06	20.13 .9480 25.97 .9421 32.28 .9357 38.23 .9297 45.11 .9228
Timmermans, 1923	
P Kg C.S.T. dt/dp P kg C.S.T. dt/dp	Drucker, 1905
1 26.4 -3.0 300 9.40 -0.061 50 23.76 -0.055 475 0.0 -0.053 100 21.14 -0.052 525 -2.6 -0.052	25° 35° 25° 35°
170 17.34 -0.054 625 -8.2 -0.052	0 0,99707 0,99409 5,639 0,99937 0,9959 0,1049 99713 99414 11.69 1,00148 9973 4320 99726 - 18,95 1,00211 9970 7623 ,99736 0,99428 69,93 0,98428 ,9758 1,9150 ,99790 ,99473 101.10 0,94785 ,9377

Tricklander, 1907 Tricklander, 1908 Tric		Friedlander, 1901
S		
14.12	· · · · · · · · · · · · · · · · · · ·	
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		,
Tsakalotos, 1909 Comparison of Comparison	16.01 1.0010 1.0027 48.73 .9876 0.9937 20.070021 65.51 .9827 0.9855	20.12
## d	Tsakalotos, 1909	23.18 2.066 25.82 2.599 23.73 2.028 26.37 2.498
0 0.9970 0.9972 66.0 0.9322 0.9848 23.3 .9934 1.0016 78.7 .9714 .9746 32.7 .9965 48.3 .9936 0.9942 1.00 .9441 .9481 48.3 .9936 0.9942	· · · · · · · · · · · · · · · · · · ·	24.67 1.970 27.47 2.363 27.89 1.798 30.47 2.123 33.99 1.531 35.50 1.836
0		1
32.79965	23.3 .9984 1.0016 78.7 .9714 .9746	,
Moles, 1911	32.7 .9965 - 100 .9441 .9481	26.51
## d	Moles, 1911	
0.0 0.9982 0.9922 65.0 0.9880 0.9730 11.51 1.0032 .9950 78.2 .9782 .9610 21.70 1.0023 .9950 78.2 .9782 .9610 21.70 1.0023 .9950 78.2 .9782 .9610 21.70 1.0023 .9950 78.2 .9782 .9610 30.00 1.0010 .9893 100.0 .9647 .9533 30.00 1.0010 .9893 100.0 .9502 .9300 47.50 0.9936 .9824 .	% d % d	26.39 2.928 25.77 3.108 27.45 2.743 26.37 2.963 30.45 2.436 30.78 2.596
Holmes, 1913 # d	11.51 1.0032 .9950 78.2 .9782 .9610 21.70 1.0023 .9923 90.0 .9647 .9533 30.00 1.0010 .9893 100.0 .9502 .9300	42.20 1.748 42.29 1.900 59.93% 100% 20.99 3.677 14.66 1.602 21.49 3.598 20.13 1.464
## d	Holmes, 1913	26.46 3.087 32.28 1.215 33.41 2.547 38.23 1.118 42.32 2.045 45.11 1.020
71.93		
76.39 .98292 87.27 0.97303 Tsakalotos, 1909 26° 22° 26° 22° De Lattre, 1927 10.00 25.90 0.9969 41.00 26.39 0.9924 33.32 26.37 .9953 49.00 25.77 .9894	15°	
81.57 .97969 26° 22° 26° 22° 26° 22° 0 870 958.0 66.0 2772 3161.0 23.3 1608 1803.0 78.7 2591 2958.0 32.7 2067 100.0 1167 1280.0 48.3 2636 3037.0 0.00 25.90 0.9969 41.00 26.39 0.9924 33.32 26.37 .9953 49.00 25.77 .9894		Tsakalotos, 1909
De Lattre, 1927 10	81.57 .97969	
De Lattre, 1927 23.3		•
0.00 25.90 0.9969 41.00 26.39 0.9924 33.32 26.37 .9953 49.00 25.77 .9894		23.3 1608 1803.0 78.7 2591 2958.0 32.7 2067 - 100.0 1167 1280.0
0.00 25.90 0.9969 41.00 26.39 0.9924 33.32 26.37 .9953 49.00 25.77 .9894 36.30 26.51 .9941 100.00 25.97 .9421		
	0.00 25.90 0.9969 41.00 26.39 0.9924 33.32 26.37 .9953 49.00 25.77 .9894 36.30 26.51 .9941 100.00 25.97 .9421	

Whatmo	ugh, 190	02	· · · · · · · · · · · · · · · · · · ·					п				
t	σ	t		J			Fried	lander,	1901			
Ł ₁	·		Lg				t	с	n	D	F	
6.5 11.0	29.97 29.49	6.0 11.0		.70 .41					0	%		
15.3 19.8 25.2	29.15 28.82 28.43 r, 1905	15.5 20.0 25.2	5 29 0 28	.02 .76 .43			20.46 22.46 24.43 26.40 28.77 30.95	1.331 .330 .330 .330 .330	10 .3 92 .3 66 .3 42 .3 13 .3	3315 3302 3279 3257 3231 3204	1.33737 .33701 .33679 .33653 .33626 .33598	
c	σ		с	σ			23.70	1.357	78 1.3	35974	1.36415	
	73.07 70.60	35° 71.73 69.30	5.649 11.69	25° 37.80 30.25	35° 37.15 29.75 27.55	 5	23.97 24.29 26.29 30.51	.357 .357 .357 .356	54 21 74	35969 35960 35926 35882 6.40%	.36404 .36392 .36355 .36310	
.4320 .7623	63.45 59.25 50.30	62.55	18.95 69.93 101.10	27.75 26.90 24.05	27.55 26.25 23.80	5	26.15 26.45 26.95 23.40 30.26	1.359 .359 .359 .359	83 1 79 66 34	36184 36178 36173 36134 36094	1.36628 .36617 .36611 .36586 .36537	
Antone	ov, 1907	7					26.27	1.362	94 1.3	36491	1.36939	
% 	26.2°	ه 22°	%	26.2°	σ	22°	26.27 26.35 26.71 28.24 30.11	.362 .362 .362 .362	80	36492 36487 36457 36407	.36936 .36927 .36892 .36847	
0 16.01 20.07 22.31	70.71 26.57 26.03	26.71 26.02 26.06	65.51	25.98 25.93 25.99 23.95	:	26.02 25.97	25.49 25.76 26.27 27.83 30.24	1.368 .368 .368 .367	49 61 1.3 52 .3 34 .3	9.06% 37060 37051 37040 37001 86938	1.37510 .37502 .37496 .37442 .37381	
Moles	. 1911						20.46	1.391)0% 19343	1.39822	
%		σ 40°	K	20°	σ	40°	22.44 24.29 26.38 28.30 30.93	.390 .389 .388 .388	49 .3 74 .3 83 .3 06 .3	9258 9187 9097 9016 8908	.39729 .39651 .39559 .39484 .39366	
0.0 11.51 21.70 30.00 47.50	71.95 29.87 26.28 26.40 26.43	68.65 27.57 25.27 25.15 24.83	65.0 78.2 90.0 100.0	26.45 26.00 25.68 24.24	2.	4.51 4.21 3.49 2.92		ittre, 19				====
		===			==	===	- X	t	n _D	Я	t	n _D
							0.00 33.32 36.30	25.90 26.37 26.51	1.33262 .35169 .35170	41.00 49.00 100.00	26.39 25.77 25.97	1.36485 .37048 .39114

WATER + VALERIC ACID

Friedländer, 1901	Water + Valeric acid (C ₅ H ₁₀ O ₂)
t x t x	
19.99% 24.25%	Drucker, 1905
17.38 7.150 23.18 6.945 18.48 7.225 23.73 6.999 20.03 7.421 24.67 7.108 24.96 8.020 27.89 7.444	c d σ 25° 35° 2 5° 35°
24,96 8,020 27.89 7.444 32.97 8,903 33.99 8,069 42.32 9,832 42.15 8.821 33.32% 36.30%	0.2192 0.99716 0.99410 59.50 58.40 0.3758 .99719 .99405 54.25 53.00 0.3314 .99726 .99414 42.60 42.10 2.340 .99762 - 31.60 32.00
25.82 4.981 25.94 4.483 26.37 5.031 26.51 4.532 27.47 5.126 27.59 4.622	3.171 .99793 0.99464 31.60 30.40 87.04 .95179 .94310 25.80 24.60 93.91 .93620 .92733 26.85 26.05
30.47 5.395 30.54 4.346 35.50 5.748 35.52 5.189 42.26 6.220 42.33 5.631 41% 49%	
25.87 3.665 25.28 2.232 26.39 3.705 25.77 2.255 27.47 3.783 26.87 2.303 30.45 3.976 30.78 2.467	Water + Isovaleric acid($C_5H_{10}O_2$)
30.45 3.976 30.78 2.467 35.46 4.272 35.91 2.660 42.20 4.625 42.29 2.881 59.93%	Timmermans and Kohnstamm, 1910 C.S.T. limits of pressure dt/dp
20.99 0.8716 21.49 .8801 22.50 .9006	95.0 5 - 60 Kg -0.03
26.46 .9709 33.41 1.0386 42.32 1.2290	
	Lecat, 1949 % b.t. Dt min.
Davies, 1935	18 0.9
% U % U	18.4 99.5 Az 100 176.5 -
15°	
4.080 0.9942 21.15 0.9407 6.214 .9911 21.98 .9360 8.111 .9883 22.73 .9317 9.305 .9367 23.38 .9323	Drucker, 1905
11.12 .9825 24.22 .9319 12.45 .9789 25.15 .9307	c d o 25° 35° 25° 35°
13.84 .9748 26.08 .9231 14.94 .9715 27.06 .9200 17.03 .9627 28.05 .9137 18.71 .9539 29.69 .9093 20.34 .9453	0 0,99707 0,99409 73.07 71.73 0.1452 .99712 .99402 64.65 64.00 0.3404 .99714 .99411 57.65 57.30 1.034 .99722 .99416 45.95 44.80 2.542 .99738 .99423 35.05 34.35 4.243 .99785 .99444 29.60 28.95 5.237 .99753 .99434

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WATER + OXALIC ACID

Water + Oxalic acid ($C_2H_2O_4$)	Koppel and Cahn, 1908
Gerlach, 1886	% f.t. % f.t. % f.t.
% b.t. % b.t. % b.t. 0 100 55.56 112 69.46 123 11.42 101 57.27 113 70.42 124	3.416 0 17.71 40 37.92 70 5.731 10 23.93 50 45.80 80 8.69 20 30.71 60 54.59 90.2 12.46 30
20.38 102 58.84 114 71.29 125 127.33 103 60.27 115 71.43 125.2 33.02 104 61.61 116 75.65 130 37.73 105 62.89 117 79.68 135 41.35 106 64.10 118 83.89 140 44.44 107 55.27 119 88.20 145 47.09 108 66.38 120 92.59 150 49.49 109 67.49 121 97.09 155 51.68 110 68.50 122 100.00 158	Snethlage, 1950 # f.t. # f.t. # f.t. 3.39 0 12.51 30 47.39 80 5.39 10 17.83 40 54.57 90
Koppel and Cahn, 1908	5.39 10 17.83 40 54.57 90 8.34 20 31.71 60 (2+1)
% b.t. % b.t.	Wasastjerna, 1920
17.25 101.58 53.64 110.65 34.95 103.90 60.99 113.90 47.59 107.20 67.93 116.00	M d n 6563 Å 5893 Å 4861 Å
Lescoeur, 1887, 1890 and 1896 t p dissoc. t p dissoc.	20° 0.0000 0.99823 1.33151 1.33331 1.33748 0.1132 1.00336 1.33270 1.33458 1.33877 0.1697 1.00580 1.33321 1.33513 1.3393 0.2263 1.00821 1.33387 1.33575 1.33997 0.3394 1.01290 1.33487 1.33678 1.34105
25 1.9 45 10.6 30 2.8 67 44.5 35 4.4 78.6 84.0 40 7.1	0.4242
5 5.5 (4+1) Guthrie, 1875 E = -0.5	0.0000 0.99707 1.33108 1.33291 1.33701 0.1131 1.00210 1.33222 1.33406 1.33828 0.1695 1.00452 1.33270 1.33458 1.33877 0.2260 1.00690 1.33335 1.33521 1.33944 0.3390 1.01156 1.33439 1.33623 1.34048 0.4236 1.01501 1.33512 1.33702 1.34130 0.5083 1.01846 1.33595 1.33788 1.34213 0.5929 1.02195 1.33672 1.33860 1.34293 0.6776 1.02540 1.33750 1.33940 1.34373
Miczynski, 1886	Spothland 1050
% f.t. % f.t. 3.34 0.0 17.45 40	Snethlage, 1950 ### ### ############################
5.25 10 23.70 50 8.07 20 31.29 60 12.10 30 38.96 70	3.39 0 -7480 5.39 10 7890 8.34 20 3100 12.51 30 3160
Lamouroux, 1899 c f.t. c f.t.	17.83 40 3390 31.71 60 8940 47.39 80 9220 54.57 90 -
3.3 0 15.4 35 7.0 15 25.4 50 8.6 20 37.1 65	

Water + M	alonic ac	id (C ₃ H ₄ O ₄)					
					II	eva, 19	956 (fig	.)
Davies an	d Thomas,	1956			M	209	g 25°	
m	Dp	m Dj	p		<u> </u>			
	24.99°				0.2	72. 66.	.5 64.5	
	0.203 0.432		338 531		$\substack{0.6\\1.0}$	66. 66.	64.4 5 64.5	
1.729	0.712	4.387 .	700 891			и	М	———
2.820	1.102	,,,,,,	.,, .				20°	
					0	10	0.8	80
					0.05 .1	12 30	$\frac{1.0}{1.2}$	88 85
Miczynski	, 1886				.2	40 60	1.8 2.8	83 83
%		f.t.			.6	65	3.1	88
51.99-52.1 57.90 57.99	7	$\frac{1.0}{15.8}$ $\frac{1}{16.1}$			====			
57.99		15,1			Tamma	ann and	Tofaute,	1929
							Dλ	/λ.100
Lamourou	x and Mass				PKg	t	0.5N	1.01
С	f.t.	c	f.t.		500	20	14.0	14.0
$\frac{61.1}{70.2}$	0 15	82.6	35 50			40	12.4	11.8
70.2 73.5 76.3	20 25	$\substack{92.6\\102.3}$	65		1000	20 40	28.2 25.3	29.0 24.4
70.3					1500	20	42.9	
					1300	40	37.9	43.7 37.5
Klobbie,	1397				2000	20 40	58.0 50.4	58.7 51.1
%	f.t.	%	f.t.		2500	20	71.8	73.6
56.475	10	62.33	25			4ŏ	62.6	64.7
56.475 58.36 59.61	15 18	62.33 71.75 86.03	25 53 93		3000	20 40	85.5 74.8	88.7 78.6
61.69	24	100.00	132					70.0
					===			
King and	Mangler,	1922			Water	+ Malo	nic acids.	
m	đ	m	d		Massol	and La	mouroux,	1899
	20°	,			2 nd co	mp. Nan	ie For	mula
0.01893 .03785	0.9962 0.9990	0.60565 1.21130	1.0200					
.07570	1.0002 .0041	2.42260 4.84520	.0316 .0508		Methylm	alonic	ac. (C ₄ H	(0) 44
.30282	.0093	T.0402U	.1293		Ethylma			_ց 0 _ե) 52
m	ď	m	đ		_		ac. (C ₆ H ₁₀	
	72 (20° 0.3039	70 705				c. (C ₇ H _{1;}	
0 0.01893	72.6 72.495 72.356	0,3038 0,6056	5 69.565				ac.(C ₈ H ₁₁	
.03785 .07570	72.050	1.2113 2.4226	0 65.888	ļ			p1 4	
.15141	71.551	4.8452	0 64.033					
					<u> </u>			

M	Ø	i	M	σ	(
_	20°	25°		20°	25°
0 0.2 0.6 1.0	72.5 66.5 66 66.5	69 64.5 64.4 64.5	1.5 2.0 2.5 3.2	67 68 69.5 71	65 65.5 66.5
M	н	M	н		
	20°	,			
0 0.05 .1 .2 .4	10 12 30 40 60 65	0.8 1.0 1.2 1.8 2.8 3.1	80 88 85 85 85 85		

1 aunum	um and	Toraute,	1929			
	Dλ/λ.100					
P Kg	t	0.5N	1.0N	3.0N		
500	20 40	$\begin{smallmatrix}14.0\\12.4\end{smallmatrix}$	14.0 11.8	12.4 12.6		
1000	20 40	28.2 25.3	29.0 24.4	25.9 24.2		
1500	20 40	42.9 37.9	43.7 37.5	39.7 36.1		
2000	20 40	58.0 50.4	58.7 51.1	53.4 47.9		
2500	20 40	71.8 62.6	73.6 64.7	66.7 60.3		
3000	20 40	85.5 74.8	88.7 78.6	79.2 74.2		

0° 44.3		25°	50°
44 3			
11.5	58.5	67.9	91.5
52.8	63.6	71.2	90.8
45.6	60.1	70.0	94.4
11.6	30.4	43.8	79.3
38.5	51.8	60.8	83.4
]	45.6 11.6	45.6 60.1 11.6 30.4	45.6 60.1 70.0 11.6 30.4 43.8

Water + Succinic acid ($C_{i_1}H_{\ell}O_{i_2}$)	Marshall and Bain, 1910 % f.t. % f.t.			
Tammann, 1915	2.67 0.0 19.24 50.0 4.69 12.5 28.24 62.5 7.71 25.0 37.64 75.0 12.36 37.5			
# P	7.71 25.0 37.64 75.0 12.36 37.5			
100° 12.20 745.6				
12.20 745.6 24.68 725.9 32.07 711.5				
35.59 704.4 49.14 663.8	Bourgoin, 1924			
	% f.t. % f.t.			
	2.80 0.0 10.94 35.5 4.05 8.5 13.32 40.5			
Baroni, 1932	2.80 0.0 10.94 35.5 4.05 8.5 13.32 40.5 4.92 14.5 16.86 48.0 5.43 17.5 37.81 78.0 7.78 27.0 54.72 100.0			
g b.t. % b.t.	7.78 27.0 54.72 100.0			
3.03 100.139 16.36 100.789				
5.54 100.246 18.88 100.929 8.13 100.363 21.42 101.080 11.04 100.508 23.88 101.240	Renrath 1042			
11.04 100.508 23.88 101.240 14.53 100.654	Benrath, 1942 % f.t. % f.t.			
	60 108 80 144 65 118 85 152 70 126 90 160			
Miczynski, 1886	70 126 90 160 75 134 100 181			
% f.t. % f.t.				
2.72 0.0 19.62 50.0 4.32 10.0 26.38 60.0 6.45 20.0 33.80 70.0 9.56 30.0 41.48 80.0 13.95 40.0	Robinson, P.K.Smith and E.R.B.Smith, 1942 Isopiestic solutions,			
Lamouroux, 1899	0.3798 0.3989 0.4982 0.5470			
c f.t. c f.t.	.4164 .4438 .5072 .5555 .4701 .5111 .5409 .6023			
2.79 0 10.6 35 4.9 15 18.0 50	1 - sucrose 2 - succinic acid			
5.8 20 28.1 65				
	Water + Methylsuccinic acid ($C_5H_8O_4$)			
Marshall and Cameron, 1910				
% f.t.	Davies and Thomas, 1956			
	m Dp m Dp			
2.69 0.0 6.40 20.0 7.91 25.0	24.99° 0,300 0,125 0,600 0,233			
12.93 40.0	.400 .163 .700 .270			
	.500			

Water + Methylsuccinic acid d ($C_5H_8O_4$)	Water + Glutaric acid (CyHgO ₁ ,)			
Berner and Leonardsen, 1939	Davies and Thomas, 1956			
% d (α) _D	m Dp m Dp m Dp			
20°	25.01° 35.02° 45.01°			
2.642 1.0047 8.85 5.011 .0107 9.13 10.438 .0243 9.73 13.889 .0335 10.05 19.434 .0476 10.44 34.700 .0880 11.92 55.370 .1430 13.18	0.493 0.199 0.325 0.229 0.325 0.434 1.000 - .388 .273 .388 .515 1.092 0.422 .710 .480 .711 .877 1.416 .480 .945 .610 .943 1.123 2.186 .680 1.894 1.090 1.883 1.941 2.403 .725 2.637 .417 2.613 2.460 2.880 .806 3.688 .777 3.646 3.094 3.789 .996 4.114 1.080			
Water + Ethylsuccinic acid d ($C_6 H_{10} O_{i_4}$)	Attane and Doumani, 1949			
Berner and Leonardsen, 1939	% f.t. % f.t.			
% (α) _D % (α) _D	31.8 3.4 56.5 23.9 41.3 10.4 61.5 28.3 51.0 18.0 74.8 45.8			
20°				
5.390 18.03 32.341 19.45 9.702 18.43 46.678 19.78 18.475 18.99 49.625 19.83 27.696 19.29 71.172 19.95	Water $+\alpha$ -Methylglutaric acid d ($C_6H_{10}O_{+}$)			
	Berner and Leonardsen, 1939			
	- π d (α) _D			
Water+ α , α '-Dimethylsuccinic acid ($C_6H_{10}O_4$)	20°			
Berner and Leonardsen, 1939	7.280 1.0139 +20.04 14.112 .0295 19.23 25.759 .0561 18.34 35.065 .0766 17.88			
d 20° 1 4.157 +8.02 5.053 -8.04 8.311 8.08 13.117 8.17 23.185 8.57 20.317 8.43	Water $+\alpha$ -Ethylglutaric acid d ($C_7H_{12}O_4$)			
	Berner and Leonardsen, 1939 % d (α)			
	ν			
	20° 3.094 1.0045 +9.17 5.909 .0094 8.97 11.506 .0191 8.68 15.624 .0262 8.48 21.450 .0363 8.12 31.106 .0531 8.20 48.395 .0843 8.39 64.847 .1117 8.88 74.674 .1275 9.53			

Water + Adipic acid (C ₆ H ₁₀ O ₄)	
	Lange and Sinks, 1930
, , , , , , , , , , , , , , , , , , , ,	- , ·
Attune and Doumani, 1949	c = 0.645 t + 28.2 (5 - 40°) solubility
% f.t. % f.t.	c = 0.492 t + 34.5 (above 40°)
2.98 34.1 14.97 60.0	$c = 276.78 (d^{20} 0.9982)$
4.87 40.0 25.43 70.0 8.46 50.0 48.67 87.1	
0.70 00.0 10.07 07.1	
	Weiss and Downs, 1923
	% f.t.
Water + β -Methyladipic acid ($C_7H_{1,2}O_4$)	44.1 25
	53.0
Attane and Doumani, 1949	59.8 60 79.7 97.5
% f.t. % f.t.	
6,38 9.5 40.6 33.2	% d % d
7.58 12.8 59.4 41.1	25°
19.50 25.9 74.7 52.3 29.90 29.8 85.5 64.3	0 0.999 25 1.081
	0 0.999 25 1.081 5 1.017 30 .101 10 .034 35 .220
	15 .0536 40 .139 20 .062 45 .159
Water + Maleic acid (C _կ H _կ O _կ)	
HILLEY PARTOLE GOOD (THEFT /	
105/	Water + Fumaric acid (C _ե H _ե Օ _ե)
Davies and Thomas, 1956	, other ,
m Dp m Dp	James and Sinks 1020
25.00°	Lange and Sinks, 1930
0.500 0.236 2.000 0.826 1.000 .436 2.500 1.006	Solubility: log. c (5-80°)= 0.01672t - 0.6362
1.000 .436 2.500 1.006 1.500 .646 3.000 1.196	where c is gr. acid in 100gr. solution.
Robinson, P.K.Smith and E.R.B.Smith, 1942	Water + Glycolic acid ($C_2H_{f 4}O_3$)
AUDINOM, AND DESCRIPTION OF THE PROPERTY OF TH	
Isopiestic solutions	Tormone 1015
m ₁ m ₂ m ₁ m ₂	Tanmann, 1915
25°	% P
0.5056 0.4727 1.371 1.542	100°
.5548 .5238 .565 1.811 .8680 .8900 .743 2.070	9.37 741.3 18.45 720.9
9530 .9927 2.000 .453	43.40 633.4
1.1710 1.275 .225 .804 .1890 .298 .523 3.264	
1 - sucrose 2 - maleic acid	
	IL

Water + Lactic acid ($C_3H_6O_3$)	Duncator 1004-05
	Dunstan, 1904-05
Tamma n n, 1915	% n % n
% p % p	
100°	12.76 1186 53.30 3591 21.71 1455 60.24 3671
8.42 747.2 36.63 689.8 14.67 737.0 45.72 656.9	30.85 1849 75.75 7995
14.67 737.0 45.72 656.9 24.64 719.8 53.43 617.7	33.69 1782 100.00 40330 34.76 2026
Abegg, 1894	Turbaba, 1890
M f.t.	mo1% a . 107 b . 109
0.963 -1.99 1.925 -4.31 2.888 -7.03	4 1920 4250 2 1060 4720 1 233 5410
3.850 -10.23	$V_{+} (0 - 30^{\circ}) = 1 + at + bt^{2}$
4.813 -14.03	't (0 00 / - 1 · ut · bt
Hoppe-Seyler and Araki, 1895	Troupe, Aspy and Schrodt, 1951
c t d	t d 85.32% 75.33% 64.89% 45.48% 24.35% 9.16%
39,850 15,2 1,09070	
22,902 14,0 05383 12,429 20,8 ,03484	20 1.1989 1.17860 1.15526 1.10980 1.05678 1.01955 25 1948 17482 15181 10536 0.5446 0.1811 30 1901 17013 14723 10182 0.5183 0.1585
39.850 15.2 1.09070 22.902 14.0 .05383 12.429 20.8 .03484 11.194 13.4 .02726 6.565 20.6 .01918	40
c t (a) _D c t (a) _D	50 .1718 .15262 .13205 .08703 .04146 .00674 60 .1631 .14250 .12357 .07925 .03513 .00076
	70 1536 13407 11532 07219 02958 0.99504 80 1443 12511 01762 06399 02260 0.98899
d l	t
39.850 11.5 3.541 12.429 23.3 -4.727 3.483 6.565 23.6 -5.864	85.32% 75.33% 64.89% 45.48% 24.35% 9.16%
22,902 11,5 2,530	25 28500 13030 6960 3090 1670 1150 30 22600 10550 6010 2740 1460 1030
11.194 16.0 1.565 10.5 1.888	40 13910 7080 4220 2030 1130 809
13.0 1.671	50 9400 4980 3120 1590 918 671 60 6400 3570 2380 1260 746 572 70 4590 2730 1850 1020 632 473
	80 3400 2080 1470 843 532 416
	Citabana 1039
Le Blanc and Rohland, 1896	Ginsberg, 1923
% d n _D	% final Q dil % final Q dil
20°	(initial 91.8%)(cal/g acid) (initial 91.8%)cal/g acid)
14.75 1.0368 1.3503 34.47 1.0871 1.3726	0.9 11.98 18.5 6.20
	1.1 11.88 37.6 4.32 2.1 11.68 44.2 3.72 3.8 10.73 48.5 3.27
	4.4 10.01 60.5 2.25
	5.0 8.90 77.6 0.9 10.2 7.46 87.9 0.3

Water + Malic acid ($C_{h}H_{6}O_{5}$)	Timmermans and Dumont, 1931				
Heterogeneous equilibria	\$ f.t.				
Tammann, 1915	13 -2.20 E 21.23 +10 26.66 20				
% p % p	₹ f.t.				
100°	% f.t.				
9.81 749.2 46.08 662.9 18.54 737.3 53.25 626.4 28.14 717.9 61.13 577.1	23 -4.26 33 -7.28 37.5 -8.80 41 -10.48 44.5 -12.10				
Davies and Thomas, 1956	Robinson, P.K.Smith and E.R.B. Smith, 1942				
m Dp m Dp	RODINSON, F.K.Smith and E.R.B. Smith, 1742				
25.00°	Isopiestic solutions.				
0.500 0.216 2.000 0.866 1.000 .436 2.500 1.086 1.500 .646 3.000 1.306					
1,500 .646 3.000 1.306	m ₁ m ₂ m ₁ m ₂ 25°				
Weiss and Downs, 1923 f.t.	0.5176 0.5278 2.570 3.054 1.048 1.123 2.942 3.585 1.742 1.989 3.070 3.773 2.107 2.441 3.738 4.653 2.188 2.552 4.802 6.118 2.521 3.008 5.034 6.420 1_sucrose, 2_malic acid				
59.15 26 68.95 50	1-sucrose, 2-maric acid				
72.85 60 76.85 70 80.65 79	Density				
	Schneider, 1880-1				
	% d % d				
Lange and Sinks, 1930	20°				
Solubility: c (5 - 80°) = 0.438 t + 47.04 Density at 20° c = 244.55 (d-0.9982) for d below 1.108 c = 216.17 (d-0.9839) for d between 1.108 and	0 0.9982 36.660 1.1705 8.402 1.0344 37.528 .1735 14.354 .0590 46.467 .2239 16.649 .0676 49.872 .2292 29.062 .1269 59.987 .2854 29.687 .1271 70.125 .3448 35.265 .1540				
1,169					
where c is gr. acid in 100 gr. solutions.					
	L.,,,,,,,,				

Nasini and Gennari, 1895-6	
& d t d	Dunstan and Thole, 1908
20° 33,24%	, d
	25°
0 0.99823. 7 1.14628 4.6057 1.01560 20 .13949 8.2292 .03039 41.5 .12720	0 0.99 72 17.43 1.0665
16.8373 .06629	
20.7348 .08268 25.6650 .10335 27.3970 .11269	Weiss and Downs, 1922
28.7231 .11926 30.0195 .12394	% d % d
34.2400 .13949 34.2667 .14232 41.5700 .17959	25°
42.8 000 .18608	_
59.0184 .27230 72.7200 .34543	5 1.019 30 .128 10 .039 35 .150
1001	0 0.999 25 1.103 5 1.019 30 .128 10 .039 35 .150 15 .0595 40 .177 20 .080 45 .200
Woringer, 1901	1000 10 1400
% d % d	
0 0.9982 20° 24.212 1.1035 7.316 1.0279 31.533 .1401	
[10.228 .0412 38.952 .1728	Descamps, 1939
14,946 .0620 50.918 .2424 19,314 .0822	8 d 8 d
	20°
Winther, 1902	4.5580 1.0159 9.5469 1.0356 7.7204 1.0283 15.8631 1.0614
t d	7.7204 1.0283 15.8631 1.0614 8.5030 1.0313 22.9482 1.0917
59.72% 44.99% 30.10% 14.97%	
20 1.2581 1.1870 1.1195 1.0557 30 .2507 .1806 .1139 .0515	
30 .2507 .1806 .1139 .0515 40 .2484 .1740 .1088 .0470 50 .2358 .1670 .1030 .0419 60 .2276 .1599 .0965 .0363	Guillaume, 1946
60 .2276 .1599 .0965 .0363	% d
	20 °
Grossmann and Wienecke, 1906	8.17 1.0315 18.56 .0760
c t d c t d	34.78 .1481
ll	
26, 985 10 1, 1922 13, 484 10 1, 0511	
26,752 30 .0927 13,391 30 .0439	Dunstan and Thole, 1908
2 N 24.482% 1 N 12.827% 26.985 10 1.1022 13.484 10 1.0511 26.876 20 .0978 13.442 20 .0477 26.752 30 .0927 13.391 30 .0439 26.636 40 .0830 13.341 40 .0399 26.496 50 .0823 13.278 50 .0350 26.347 60 .0762 13.206 60 .0294 26.189 70 .0698 13.130 70 .0235 26.030 80 .0632 13.055 80 .0177 25.844 90 .0557 12.967 90 .0108	% n
26, 189 70 .0698 13, 130 70 .0235	25°
25.844 90 .0557 12.967 90 .0108	0 891
0.25 N 3.325%	17.43 1550
6.722 20 1.0232 3.361 20 1.0106 6.675 40 .0161 3.338 40 1.0037	
6.611 60 .0064 3.308 60 0.9947 6.540 80 0.9957 3.273 80 0.9842	
6.495 90 0.9842 0.125 N 1.673%	
1.681 20 1.0043 1.635 80 0.9771 1.663 50 0.9939	
1,000 00 0.770y	

Rotatory power	Woringer, 1901
Schneider, 1880-1	ς (α) red yellow green pale dark blue blue
β (α) _D β (α) _D	20°
8.402 -2.30 36.660 +0.09 14.354 -1.73 37.528 0.17 16.649 -1.58 46.467 1.00 29.062 -0.63 49.872 1.38 29.687 -0.34 59.987 2.31 35.265 -0.04 70.125 +3.34	7,316 -2.315 -2.479 -2.000 -1.874 -0.784 10.228 -1.591 -2.346 -1.872 -1.610 -0.713 14.946 -1.247 -1.228 -1.247 -0.869 +0.085 19.314 -1.078 -1.050 -0.658 -0.265 +0.909 24.212 -0.664 -0.589 -0.181 +0.314 +2.235 31.533 -0.296 +0.003 +0.471 +1.077 +2.986 38.952 +0.182 +0.600 +1.383 +2.080 +4.152 50.918 +1.150 +1.798 +2.934 +3.880 +6.677
Thomsen, 1882	Winther, 1902
% (α) _D	t (a) t (a) t (a)
10° 20° 30°	59.72% red yellow green
21.65 -0.44 -0.90 -1.43 28.67 +0.33 -0.35 -0.83 40.44 +1.31 +0.54 -0.12 53.75 +2.52 +1.73 +0.94 64.00 +4.10 +2.72 +1.99	15.1 +1.61 15.5 +2.20 15.3 +3.2 26.7 0.94 30.1 1.30 28.9 2.0 41.0 0.22 38.6 0.65 40.5 1.0 50.2 -0.26 51.2 -0.16 51.0 0.3 60.0 0.70 60.0 0.68 60.0 -0.4 pale blue dark blue
Nasini and Gennari, 1895–6 β (α) red yellow green pale dark	15.1 +5.75 15.2 +6.82 28.2 4.05 27.5 5.12 41.6 2.44 41.5 3.33 50.4 1.50 50.8 2.17 60.0 0.49 60.0 1.05
red yellow green pale dark blue blue	44.99%
20°	red yellow green
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	77.9 0.06 30.6 0.21 29.3 0.8 40.7 -0.47 39.8 -0.34 41.3 -0.07 49.8 0.88 51.6 1.01 50.3 0.74 60.1 1.34 59.7 1.38 60.0 1.45 pale blue dark blue
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17.6 +3.57 17.6 +4.56 29.3 2.33 18.5 3.25 41.3 1.02 41.4 1.69 50.3 0.08 50.8 0.59 60.0 -0.79 60.0 -0.40
	red yellow green
t (α) red yellow green pale dark blue blue	
33.24%	60.5 1.85 60.0 2.06 60.2 2.30 pale blue dark blue
7 +0.44 +0.78 +1.48 +1.97 +2.63 20 -0.41 -0.31 -0.07 +0.46 +0.86 41.5 -5.96 -6.93 -7.57 -6.24 -5.84	16.2 +1.75 16.2 +2.55 29.1 0.77 28.2 1.61 41.4 -0.45 41.9 0.09 50.6 1.20 51.5 -0.87
	60.4 2.03 60.5 1.76

		14.97%				Water +	Tartari	ic acid (C ₁	.Н.О.)	
17.7 27.8 40.8 50.1	red -1.20 1.46 1.98 2.24	29.4 41.3	1.52 2.04 2.50		1.52 2.36			equilibria .		
60.2	2.24 2.51 le blue	51.0 59.0	2.64 ark blue	59.3	2.76 3.15	Speranski	i, 1909	and 1910		
17.5	+0.38		+0.51 -0.57			t		р	t	р
29.6 41.0 50.6 59.8	-1.02 2.04 2.69 3.19	17.3 28.5 41.1 51.0 60.0	1.72 2.44 3.03			22.70 26.18 29.11 31.17 34.63		sat.so 18.43 21.95 25.40 28.11 33.32	38.05 41.70 43.22 46.31	39.19 46.63 49.88 57.60
Gross	mann and	l Wieneke,	1906							
		(α) _D		t	(α) _D	Tammann,	1915			
		24.482%		1 N	12.827%	%		р	5	р
26.985 26.876 26.752 26.636 26.496 26.347 26.189 26.030 25.844	10 20 30 40 50 60 70 80	+0.1 -0.5 -1.0 -1.6 -2.1 -2.6 -3.0 -3.4 -3.8	13.484 13.442 13.391 13.341 13.278 13.206 13.130 13.055	10 20 30 40 50 60 70	-0.7 -1.1 -1.6 -2.1 -2.7 -3.2 -3.7	21.59 32.40 44.25 49.87 60.44		732.8 708.2 667.9 647.2 589.7	10.65 15.49 31.34 38.21 50.58 54.39	748.1 740.7 710.5 690.7 637.7 610.4
25,844		-3.8 6.568%	12,967	90 0.25 N	-4.6 3.325%					
6.722 6.675 6.611 6.540 6.495	20 40 60 80 90 0.125 M	-2.1 -3.1 -4.1 -4.9 -5.4 1.673%	3,361 3,338 3,308 3,273	20 40 60 80	-3.0 -4.2 -5.1 -5.8	Gerlach,	b.t. 100 101 102 103	%	136 137 138 139	
1.663 1.635	50 80	-5.4 -6.7				46.5 51.2	104 105 106	01.2	140 141 142	
Descar	mps, 198					63.9 66.1	107 108 109 110 111	91.5 91.9 92.3 92.7 93.0	143 144 145 146 147	
- 8	(a)	200	<u>%</u>	(a) 5461		68.2 70.0 71.6	112 113 114	93.7 94.1 94.4	148 149 150	
4.5586 7.720- 8.5036	0 -2 4 -1 0 -1	2.14 83 74	9.5469 15.8631 22.9482	-1.65 -1.06 -0.43		71.6 73.1 74.5 75.7 76.9 77.9 78.9	114 115 116 117 118 119 120	94.4 94.7 95.0 95.4 95.7 96.0 96.3	151 152 153 154 155 156	
%	ume, 194	*(a) ma				79.8 80.6 81.4 82.1 82.9 83.5 84.2 84.8 85.3 85.9	121 122 123 124 125 126 127 128 129 130	96.6 96.9 97.1 97.7 98.0 98.3 98.5 98.8	157 158 159 160 161 162 163 164 165 166	
8.17 18.56 34.78	7 6 8	3.869 3.715 3.476	5	1.34 1.35 1.37	88	86.4 86.9 87.4	131 132 133	99.3 99.5 99.8	167 168 169	
		, gauss, o	entim.			87.9 88.4	134 135	100.3	170	

T-h	100/	· ' ·				J.L.			***************************************
Johns	ton, 1906 b.t.	 %	b.t.		Jones,	1904 and Jo	nes and G	etman, 1904	
					М	f.t.	M	f.t.	
1.68 7.14 13.52 17.66	100.168	31.43 36.16	100.687 101.079 101.349	en mana des de la colonia de la compansión de la colonia de la colonia de la colonia de la colonia de la coloni	0.05 .10 .20 .40	-0.111 -0.217 -0.425 -0.826	0.6 0.8 1.0	-1.230 -1.680 -2.150	
	1000								
Baron %	i, 1932 b.t.	%	b.t.			_		1015	
				- <i></i>		, Booge and			
2.52 5.10 8.10	100,093 100,193 100,32	2 11.73 5 15.61 2 19.85	100.49 100.69 100.94	1	0.407	f.t. -0.790 1.000	1.59	-3,225	
Guthri	e, 1876			ganggangan pan mgambinah pan pan san san san san san san san san Malaun san manah san san san san san san san san san san	.509 .747 .940 1.090	1.459 1.862 -2.154		4.790	
	f.t.		f.t.						
5					Findley	and Campb	ell. 1928	and 1930	
10 15 20	-1.4 -2.5 -3.7	30 35 40 45	-7.6 -10.1 -13.0		-	# rac	f.t.		وخودخل مودخاه هد مرسمي مغيسي سي
25	-4.7				59.6	17,			
					39.0		, <u>2</u> 5		
Leidie	, 1882								
f.t.	% (d+1)	%(rac)	f.t. % (d+1) %(rac)	Dalman,	1937 (fig.)		
0	53.50	8.16	55 67.	30 36,34	笼	f.t.	8	f,t.	
0 5 10 15 20 25	54.55 55.70 56.92 58.23 59.67 60.96	9.13 10.96 13.02 15.25 17.63 20.13	60 68. 65 69. 70 70. 75 72. 80 73. 85 74.	50 39.21 71 41.98 89 44.61 06 47.13 11 49.52 32 51.81	52 58.48 60 65	0 25 39 50	70 75 78	69 88 100	
35 40 45 50	62.36 63.77 64.92 66.10	22.70 27.01 30.22 33.33	90 75. 95 76. 100 77.	40 53.85 44 56.00	Herrero	-Sanchez.	1948		
(1+1)					c	f.t.	c	f.t.	
Abegg,	1894				71.2 72.3 73.3	5 10 15	74.4 75.3 76.4	20 25 30	
М		f.t.			=======		======		
0.702 1.404 2.105 2.807 3.509		-1.459 -3.175 -5.355 -8.155 -11.857							
								34	

Robinson, P.K.Smith and E.R.B.Smith, 1942	Schiff, 1860
Isopiestic solutions.	% d % d
m ₁ m ₂ m ₁ m ₂	15°
25° 0.7262 0.7160 2.428 2.573 .7965 .7898 2.727 2.900 .9718 .9748 3.084 3.306 .9976 1.0045 .155 .381 1.203 .222 .546 .815 .331 .360 .648 .925 .363 .393 .951 4.258 .668 .728 .976 4.290 .749 .811 4.748 5.155 .761 .829 5.047 5.476 .944 2.026 .095 5.526 2.004 .091 .815 6.355 .258 .377 .825 6.362 .260 .382	0 0,9991 26 1.1262 1 1,0036 27 .1315 2 .0081 28 .1369 3 .0126 29 .1423 4 .0172 30 .1478 5 .0218 31 .1533 6 .0265 32 .1588 7 .0312 33 .1643 8 .0359 34 .1699 9 .0406 35 .1755 10 .0454 36 .1811 11 .0502 37 .1868 12 .0550 38 .1925 13 .0599 39 .1982 14 .0648 40 .2039 15 .0698 41 .2097 16 .0748 42 .2153 17 .0798 43 .2214 18 .0848 44 .2273 19 .0898
Density	23 .1104 49 .2573 24 .1156 50 .2634 25 .1209
Gerlach, 1859 % d % d	
% d % d	Krecke, 1872
0 0.9990 29 1.1439	t d 40% 20% 10%
1 1.0036 30 1.495 2 .0081 31 .1550 3 .0127 32 .1605 4 .0170 33 .1660 5 .0215 34 .1716 6 .0264 35 .1771 7 .0313 36 .1830 8 .0362 37 .1890 9 .0411 38 .1949 10 .0460 39 .2008 11 .0508 40 .2067 12 .0556 41 .2127 13 .0604 42 .2187 14 .0652 43 .2248 15 .0700 44 .2306 16 .0752 45 .2366 17 .0813 46 .2430 18 .0856 47 .2493 19 .0907 48 .2557 20 .0959 49 .2625 21 .1010 50 .2685 <	-10
	0 1.2770 1.2133 25 .2621 .2014 50 .2452 .1851 75 .2288 .1667 100 .2184 .1477

Kohlrausch 1976	Le Blanc and Rohland, 1896
Kohlrausch, 1876	% d
% d % d	200
4.95 1.0214 29.82 1.1475 9.87 .0448 39.72 .2045 19.85 .0943 49.53 .2642	0 0.9982 6.30 1.0274 10.48 1.0474 15.16 1.0700
Traube, 1885	
% d % d	Linebarger, 1898
15°	g d
0 0,9991 16,67 1.0916	15°
0 0.9991 16.67 1.0916 4.76 1.0236 23.08 .1339 9.09 1.0467 28.57 .1724	0 0.9991 18.18 1.0870 33.33 .1866 50.05 .2699 53.32 .2913
Thomsen, 1885	:======================================
% d 10° 20° 25° 30°	W
ll control of the con	Wendell, 1898 % d
0 0.9997 0.9982 - 0.9957 20 1.0975 1.0945 - 1.0905	20°
0 0.9997 0.9982 - 0.9957 20 1.0975 1.0945 - 1.0905 30 .1535 .14951460 40 .2115 .20652015 50 .2745 .2670 1.2635 .2600	10.0613 1.0454 20.9248 .0995 30.0836 .1484 38.5768 .1968 48.8329 .2595
Thomsen, 1886~7	t d
mol% d	41.1793% 18.656%
18° 0.5 1.0186	0 1.22605 1.0949 10 .21875 .0913 20 .21290 .0877
1.0 .0358 2.0 .0677 3.9 .1229 9.0 .2409	20 .21290 .0877 30 .20710 .0836 50 .19330 .0729
	Pribram and Glücksmann, 1898
Moore, 1895	% d % d
M d	20°
18° 0.00 0.9987 .233 1.0130 .467 .0269 .833 .0542 1.666 .1092	0.2091 0.99919 16.063 1.07469 0.7171 1.00153 18.186 .08510 1.0140 .00277 19.186 .08991 1.2391 .00382 20.698 .09780 2.0084 .00741 30.161 .14860 4.0098 .01645 33.847 .16885 5.0894 .02150 35.751 .18023 6.2049 .02687 44.330 .23119 10.8870 .04905 49.946 .26553

Lepesc	hkin, 189	9								
8		t	d		Dunsta	n and Thol	e, 1908			
62,26		50	1,3223			%	đ	%	đ	
62.26 63.17 66.48		60 40 20	. 3161 . 3394 . 3796		=======================================	0.0 4.02 4.64 7.00 7.69 7.99	25° 0.9972 1.0153 .0181 .0290 .0328 .0337	9.966	1.0428 .0511 .0583 .0673 .0719	
Winthe	r, 1902					7.99	.0007			
t	48.39%	41.30%	d 37.37%	24.13%	9.68%	Golse, 1	1911			
30	1.2560 .2493 .2425	1,2127 ,2064 2001	1.1895 .1833 .1773 .1707 .1638	1.1156	1.0430 .0395 .0355	%	d	%	đ	
50 60	. 2425 . 2356 . 2282	.2064 .2001 .1933 .1865	. 1707 . 1638	. 1002 . 0937	.0307	11 10 45		11. 24.62	1.1221	
Rudorf	, 1903				=======	10.45 17.79 25.44 31.65 38.26 44.28	.0871 .1274 .1618 .2006 .2370	29.10 33.49 37.82	.1468 .1716 .1969 .2180	
M			đ			14	1.5°	20	0	
		5∘	1.0394 .079 0 .1606			1.07 2.84 4.84 6.93 7.31 9.83	1,0043 .0122 .0214 .0313 .0335 .0454	2.00 4.91 9.61 18.46 26.64 34.22 41.31 47.88	.1294 .1714 .2131	
Jones, M	1904 and d		Getman, 1	904				_		
)o 	d			King a	and Wample			
0.05			1 03669	0	ļ	in	d	m	d	
.10	.003892 .010336 .023720	0.8	1.03668 .05575 .06260		T TT 3 2 2 .	0,125 ,250 ,500 1,000	500 1,010 000 .018	84 4.0000 \$5 8.0000	.1906	
Grossma	nn and Wi		906							
t 37	7.806% 2	d 6.650%	26.011%	10.776	%	Guillau	me, 1946			
20 . 30 . 40 . 50 . 60 . 70 .	1953 1 1895 1834 1769 1707 1637 1563 1486 1413	.1329 .1284 .1234 .1179 .1134 .1061 .0964 .0922 .0852	1.0972 .0938 .0890 .0840 .0789 .0730 .0666 .0595	1.0506 .0479 .0447 .0404 .0353 .0298 .0235 .0165 .0103		9.05 16.60 31.0 47.8	20°	1.0421 .0784 .1553 .2556		

Rakshit, 1925	
% d % d	Linebarger, 1898
20°	% o
1 1.00289 30 1.12817 5 1.02086 50 1.22205 10 1.04257 80 1.326483	15° 18.18 71.44 33.33 72.11 50.05 73.39 53.32 73.86
Richards and Gucker, 1925	Dunstan and Thole, 1908
4mol% d ^{1 g} = 1,1352	- 1
Turbaba, 1890 mol% a. 107 b. 109 0.5 276 5076 1.0 840 4810	0.0 891 9.966 1120 4.02 969 11.675 1175 4.64 991 13.14 1218 7.00 1040 15.01 1294 7.69 1047 15.98 1319 7.99 1065
2.0 1786 3961 4.0 3086 2692	King and Wampler, 1922
$v_t (0 - 30^\circ) = 1 + at + bt^2$	m o m o
	20°
Other physical properties Moore, 1895	0 72.600 1.00000 72.694 0.12500 72.660 2.00000 72.895 .25000 72.637 4.00000 73.260 .50000 72.675 8.00000 74.125
M η(water=1) M η(water=1)	
18° 0.000 1.000 0.833 1.316 .233 .067 1.000 .412 .467 .139 1.478 .696 .500 .160 1.666 .853	Le Blanc and Rohland, 1896 % n _D 20°
Rudorf, 1903	0 1.3333 6.30 .3409 10.48 .3463 15.16 .3525
<u>м</u> η м η	
25° 2.5 1748 0.312 949 1.25 1177 .156 919 0.625 1006 .078 904	Pagliarulo, 1926 w.l. n
	47.659% 39.037% 28.286%
Traube, 1885	6678 1.38535 1.37456 1.36856 6266 .38653 .37555 .36927 5893 .38779 .37661 .37016 5875 .38789 .37667 .37020 5780 .38824 .37696 .37052 5460 .38955 .37823 .37164 518337284 5015 .39180 .38034 .37368 491638090 .37421
9.09 72.61 28.57 73.27	471337539 4471 .39552 .38397 .37700 4358 .39637 .38479 .37779

Golse, 1911	Jones, 1904 and Jones and Getmann, 1910
% п _D % п _D	M λ M λ
11° 11.5° 10.45 1.3474 24.62 1.3669 17.79 .3576 29.10 .3742 25.44 .3684 33.49 .3807 31.65 .3779 37.82 .3872 38.26 .3881 41.35 .3925	0.05 28.05 0° 0.6 8.02 0.1 20.54 0.8 6.69 0.2 14.34 1.0 5.76 0.4 10.13
44.28 .3979 49.35 .4015 14.5° 20°	Specific rotatory power
1.07 1.3349 2.00 1.3356 2.84 .3369 4.91 .3392 4.84 .3395 9.61 .3451	Thomsen, 1885
6.93 .3428 18.46 .3565 7.31 .3462 26.64 .3686 9.83 34.22 .3801	% (α) _D 10° 15° 20° 25° 30°
9.83 34.22 .3801 41.31 .3910 47.88 .4023	20 10.89 - 11.99 - 12.95 30 9.16 - 10.41 - 11.44 40 7.63 - 8.95 - 10.11 50 5.92 6.68 7.36 8.00 8.63
Guillaume, 1946	
% (α)magn.10 ⁶ n 5780 Å	Krecke, 1872
9.05 3.840 1.3449 16.603557	t (α) _D 40% 20% 10%
31.00 3.472 .3771 47.80 3.162 .4025	-10 3.286 -5 4.526
in radians, gauss, centim.	0 5.532 8.656 9.948 +5 6.651 9.059 10.935 10 7.493 9.958 11.231
Lucas and Schwob, 1932	15 7.799 10.878 12.251 20 8.319 11.570 13.043 25 9.165 11.893 13.927 30 9.615 12.489 14.701 35 10.524 13.062 15.679
Absorption c optical density optical density specif.	40 11.028 13.653 16.756
c optical density optical density specif.	45 11.858 14.346 17.109 50 12.272 15.012 17.935 55 12.549 15.554 18.306 60 12.633 16.182 18.848
50 0.075 0.150 25 .047 .188 12.5 .033 .264 6.25 .027 .422 2536 Å 50 0.197 0.394 25 .184 0.736	60 12.633 16.182 18.848 65 12.876 16.787 19.423 70 13.376 17.157 20.115 75 13.909 17.742 20.724 80 14.271 18.396 21.916 85 15.148 19.210 22.218 90 15.909 19.993 22.943 95 16.947 20.966 23.799 100 17.664 21.484 10.011
12.5 .141 1.128 6.25 .0188 1.408	t C D E b F
	40%
Kohlrausch, 1876 % κ τ.10 % % κ τ.10 4	0 4.570 4.570 5.459 - 7.082 25 8.155 8.155 9.138 - 10.165 50 10.530 10.530 12.084 - 14.730
18°	75 12.138 12.138 14.222 16.693 17.781 100 15.392 15.392 17.506 20.558 22.680 50%
4.95 59.53 186 29.82 95.70 200 9.87 80.78 191 39.72 78.68 222 19.85 98.88 187 49.53 54.22 263	0 5.641 6.425 5.771 5.746 5.635 25 7.134 8.429 8.953 8.871 7.971 50 9.284 9.976 11.584 11.600 12.316 75 10.948 12.727 14.687 14.867 16.270 100 13.457 15.253 17.819 18.467 19.671

							Wint	her, 1902				
Wendell	, 1898						t	(α) red	t	(α) yellow	t	(α) green
Я	С	D	(α) Ε	b	F					48.39%		
10.0613 20.9248 30.0836 38.5768 48.8329	11.73 10.34 9.42 8.18 6.82	13.44 12.23 10.89 9.42 7.62	13.82 12.17	16.72 14.30 12.72 10.58 8.14	17.54 14.62 12.48 10.19 7.53	3	16.3 27.1 40.0 51.1 61.6	+6.26 7.41 8.41 9.35 10.06	17.0 29.0 40.7 52.2 60.5	+7.13 8.61 10.00 11.10 11.81	16.9 28.4 40.3 52.0 61.0	+7.24 9.15 10.86 12.40 13.53
							t	(α) pale b	lue	t	(α) dark blu	ie
t	С	D	(α) Ε	ъ	F				48.3	9%		
0 10 20 30	5.75 6.80 7.75 8.73	6.05 7.50 8.86 10.04	5.98 7.80 9.689 11.36	11.53	5 7 89 9 3 11	.14 .11 .37	16.7 27.6 40.2 51.8 61.2	+5.40 8.01 10.69 13.00 14.65		16.5 28.0 40.0 51.5 61.1	+3.66 6.97 9.83 12.40 14.33	
50	10.41	12.14	14.10 18.656%	14.4	14	. 85	t	(α) red	t	(α) yellow	t	(α) green
.0	8.90 10.04	9.77 11.49	11.70 12.95	11.3		.70				41.30%		
20	10.04 10.06 11.43 12.70	11.49 12.57 13.26 14.81	12.95 14.22 15.60 17.69	14.60 16.00	6 14 0 16	.99 .72 .31 .02	16.0 27.5 40.3 51.2 60.5	+7.17 8.20 9.34 10.06 10.67	16.0 26.9 40.0 51.3 60.3	+8.23 9.45 10.85 11.89 12.71	16.3 28.7 41.2 51.9 60.6	+8.69 10.43 12.35 13.62 14.52
Pribr	am and	G1ücksm	ann, 189	8				(α)			(a)	
8	(α)	D	K	(α) _D					blue		dark bl	lue
		20°					1/ 2	+7.39		.30%		
0.2091 0.7171 1.0140 1.2391 2.0084	15. 15. 15.	85 93 44 26 98	16.063 18.186 19.186 20.698 30.161 33.847 35.751 44.330 49.946	12.4 12.1 12.0 11.8 10.4	12.44 12.15 12.04 11.87		16.2 27.9 40.9 51.6 60.5	9.98 12.78 14.69 16.02	8 5	16.1 28.3 40.6 51.3 60.5	+6.00 8.98 12.08 14.22 16.05	
4.0098 5.0894	14.	35 06	33.847 35.751	9.9 9.7	7		t	(α) red	t	(α) yell	t ow	(α) green
6.2049 10.8870	13.	91 19	44.330 49.946	8.2 7.3	9 7				3	7.37%		
l	schkin,	1899					17. 29. 41. 51. 62.	0 10.4	4 28.3 3 41.3 7 51.0	$\begin{array}{ccc} 3 & 10.2 \\ 2 & 11.4 \end{array}$	3 31.0 8 41.0	0 11.56 0 12.91 0 14.08
w.1.	66.4 20°	,	(α) 63.17% 40°	62.26 50°	5% (62.26≴ 60°	t	(α p i) ale blu	t e	(α) d a:	rk blue
6659 5919 5330 4885 4482	+3.8 4.0 3.4 2.0 1.2	2 7 8 5 2	+6.68 7.83 8.25 7.97 6.14	+7.79 9.19 10.1; 10.37 9.19	3 7 9	+8.60 10.14 11.43 11.99 11.46	16 30 41 51 62		8.54 1.46 3.57 5.22 7.07	37.37% 17.4 30.6 41.0 51.0 62.1	+7 10	.48 .72 .05 .06

t	(α) red	t	(α) yellow	t	(α) green	Desca	mps, 1939			
	 _	24.1	3%			w.1.		(α)	
16.1 28.6	+9.23 10.18	16.0 27.9	+10.79 12.00 13.12	16.6 29.9 40.3	11.98 13.76 14.95	С	1.1009	9.9030	19.7966	49.5057
40.4 51.6 61.9	11.05 11.42 12.28	40.5 51.1 62.1	13.12 14.01 14.74	40.3 51.2 60.4	14.95 16.05 16.89	5780 5461 4358 4047	16.20 17.41 20.68 19.64	14.06 15.15 16.78 14.21	12.83 13.76 14.29 11.12	9.97 9.92 7.61 3.25
t	(α) pale bl	ue	t	(α) dark blue		3650 3654 3342 3132	8.93 -7.14	2.91 -20.41 -59.96	0.00 -26.53 -67.92	-11.04 -40.71 -85.33
		24.	13%			3132 3126 3022	_45 .5 3 _83 . 32	-60.32	-69.10 -102.37	-86.32 -123.33
16.4 29.1 40.3 52.0 61.7	+12.09 14.43 16.37 18.09 19.51		16.2 29.6 40.4 51.8 61.2	+11.09 14.17 16.45 18.13 19.89		2967 2926 2894 2804 2652 2536	-03.32 -106.23 - -222.29 -443.70 -856.13	_94.58 _117.57 _158.91 _233.82 _467.09	-102.37 -127.42 -144.97 -169.49 -246.96 -483.95 -927.95	-123.33 -148.49 - -275.82 -522.96
t	(α) red	t	(α) yellow	t	(α) green					
16.1	+10.79	9.6 19.8	8% +13.07	19.4	.15 15	Heat o	onstants			
28.6 40.4 51.6 61.9	11.62 12.47 12.72 13.40	29.7 41.2 50.0 62.2	14.30 15.06 15.52 16.02	31.8 41.8 51.0 61.0	+15.15 16.40 17.36 18.02 18.93	Thoms	en, 1886-87			
t	(α)		t	(α)		mol%		U		
	pale blu			dark blue			18°			
19.5 31.0 41.8 50.7 62.2	+16.14 18.09 19.46 20.84 21.97	9.68	19.5 31.4 41.5 50.8 61.8	+15.05 18.29 19.95 21.54 22.87		0.5 1.0 2.0 3.9 9.0		0,975 ,952 ,911 ,856 ,745	2	
					======	Richa	rds and Guck	er, 1925		
Grossma	nn and Wier	neke, 1	906 (fig.)		t		ט		
tt	(α)		t	(α)		4 mo1%			
10 20 30	8.0 9.2 10.4	37.8	60 70 80	13.1 13.1 14.1	9	16 18 20		0.852 .852 .854	328	
40 50	$\frac{11.4}{12.3}$	26.6	90 50%	14.1 15.1	2	4 mo	d1% d18=	1.1352		
10 20	9.9 10.9		60 7 0	14.4 15.0	0					
30 40 50	11.9 12.9 13.7		80 90	15.8 16.0	5					1
10	10.9	26.0	60	15.5						į
20 30 40	11.9 13.0 13.9		70 80 90	16.1 16.2 17.1	7					
50 10	14.7 12.5	10.7	76% 60	15.4	ζ .					
20 30 40 50	13.3 14.3 15.1 15.9		70 80 90	17.2 17.7 18.1	2					

Water + Citric acid (C ₆ H _B O ₇)	Abegg, 1894
	M f.t.
Tammann, 1885	0.415 -0.839
% p	0.829 -1.790 1.244 -2.849
100°	1.658 -4.167 2.073 -5.792
14.50 747.4	4,070
29.89 37.08 710.3	
29.89 725.2 37.08 710.3 47.29 676.7 53.29 649.3	
	Jones, 1904 and Jones and Getman, 1904
	M f.t. M f.t.
Gerlach, 1886	0.05 -0.107 0.6 -1.253
% b.t. % b.t.	0.05 -0.107 0.6 -1.253 .10 -0.207 0.8 -1.707 .20 -0.418 1.0 -2.230 .40 -0.830
0 100 79.77 117	.40 -0.830
20.63 101 80.83 118 33.55 102 81.82 119 42.53 103 82.74 120	
20.63 101 80.83 118 33.55 102 81.82 119 42.53 103 82.74 120	
49.11 104 83.60 121 54.24 105 84.55 122	Kendall, Booge and Andrews, 1917
58,41 106 85,34 123 61,89 107 86,06 124 64,85 108 86,80 125	mol% f.t. mol% f.t.
64, 85 108 86, 80 125 67, 37 109 87, 50 126 69, 57 110 88, 13 127 71, 47 111 88, 74 128 73, 14 112 89, 34 129	
69.57 110 88.13 127 71.47 111 88.74 128	0.434 -0.839 1.70 -3.363 0.705 -1.350 2.01 -4.010 1.209 -2.360 2.41 -4.920
71, 47 111 88,74 128 73, 14 112 89, 34 129 74, 65 113 89,96 130	1.450 -2.849
75.99 114 90.49 131 77.32 115 91.34 132 78.58 116 91.40 132.5	
77,32 115 91,34 132 78,58 116 91,40 132,5	
	Kremann and Eitel, 1923
Baroni, 1932	% f.t. % f.t.
% b.t.	7.95 -0.90 43.88 -10.45 12.59 1.67 45.71 11.30
	7.95 -0.90 43.88 -10.45 12.59 1.67 45.71 11.30 13.81 1.60 46.47 11.80 E 18.53 2.40 47.35 12.63 21.37 3.00 48.14 12.81 21.57 3.02 49.93 8.5
2.16 100.077 4.25 100.145	13.81 1.60 46.47 11.80 E 18.53 2.40 47.35 12.63 21.37 3.00 48.14 12.81
# 7.05 100.245 I	21.57 3.02 49.93 8.5 25.46 3.79 52.45 6.0
10.34 13.82 100.352	29.26 4.87 54.30 -3.0 31.57 5.30 56.31 +1.6
:======================================	32.05 5.40 56.58 +1.2 34.93 6.30 56.77 0.0
	32,05 5,40 56,58 +1.2 34,93 6,30 56,77 0.0 35,72 6,59 58,78 +10.8 38,50 7,03 59,30 +10.0
Guthrie, 1878	21, 37 3,00 48,14 12,81 21,57 3,02 49,93 8.5 25,46 3,79 52,45 6.0 29,26 4.87 54,30 -3.0 31,57 5,30 56,31 +1,6 32,05 5,40 56,58 +1,2 34,93 6,30 56,77 0.0 35,72 6,59 58,78 +10.8 38,59 7,91 59,30 +10.0 39,89 8,00 59,06 9 +15.0 41,50 -8,73
\$ f.t. \$ f.t.	41.50 -8.73 (1+1)
10 -1.1 45 -11.3 20 -2.8 45.93 -11.7 30 -5.0 47.06 -12.2	======================================
40 -8.5 50.70 -13.7 42.62 -9.2 E 51.50 -15.0	
<u> </u>	

Guttmann and Klema, 1927	Properties of phases.
% (1+1) f.t. % (1+1) f.t.	Gerlach, 1859
53.3 0 58.4 8 53.7 1 59.1 9 54.1 2 59.8 10 54.7 3 60.9 11 55.4 4 62.2 12 56.0 5 63.4 13 56.6 6 6 64.7 14 57.5 7 66.0 15	# d # d 15° 0 0.9990 35 1.1457 1 1.0028 36 .1565 2 .0065 37 .1554 3 .0092 38 .1602 4 .0140 39 .1651 5 .0177 40 .1699 6 .0218 41 .1746 7 .0259 42 .1804 8 .0300 43 .1841 9 .0341 44 .1889
Dalman, 1937 (fig.) % f.t. % f.t. 49 0 70 45 55 12 75 64 65 30 80 83 67.5 36 85 101 tr.t. (1+1) - anh. 67.61% 35.8°	10 .0383 45 .1937 11 .0422 46 .1988 12 .0461 47 .2039 13 .0500 48 .2092 14 .0540 49 .2142 15 .0579 50 .2193 16 .0623 51 .2246 17 .0666 52 .2296 18 .0709 53 .2348 19 .0753 54 .2399 20 .0796 55 .2451 21 .0839 56 .2503 22 .0880 57 .2561 23 .0920 58 .2616 24 .0962 59 .2672 25 .1004 60 .2727
Levien, 1955 Isopiestic solutions m ₁ m ₂ m ₁ m ₂ m ₁ m ₂ 25° 0.2093 0.1209 1.2264 0.7168 5.424 3.565	26 .1050 61 .27,83 27 .1096 62 .2838 28 .1142 63 .2893 29 .1188 64 .2949 30 .1234 65 .3004 31 .1278 66 .3295 32 .1323 33 .1365 34 .1412
.2094 .1209 .697 1.012 5.532 .641 .2111 .1222 .751 .048 5.801 .824 .3084 .1766 2.359 .441 6.000 .956	Schiff, 1860
.3914 .2246 .651 .638 6.714 4.445 .5390 .3105 .667 .644 6.954 4.597 .5427 .3113 .721 .680 7.619 5.034	% d % d
.5427 .3113 .721 .680 7.619 5.034 .6479 .3730 3.154 .975 8.055 .308 .7794 .4496 3.855 2.460 8.245 .433 .8741 .5055 4.486 2.904 8.487 .588 1.0465 .6088 5.163 3.382 8.560 .636 m ₁ = molality of citric acid m ₂ = molality of sodium chloride	12° 0 0.9995 26 1.1066 1 1.0032 27 .1111 2 .0070 28 .1157 3 .0108 29 .1203 4 .0146 30 .1249 5 .0185 31 .1296 6 .0224 32 .1343 7 .0263 33 .1390 8 .0302 34 .1437 9 .0342 35 .1485 10 .0382 36 .1533 11 .0423 37 .1581 12 .0464 38 .1630 13 .0505 39 .1679 14 .0546 40 .1728 15 .0588 41 .1778 16 .0630 42 .1828 17 .0672 43 .1878 18 .0714 44 .1929 19 .0757 45 .1980 20 .0800 46 .2030 21 .0844 47 .2082 22 .0838 48 .2134 23 .0932 49 .2186

Traube, 1885	Guillaume, 1946
% d	% d
15°	20°
9.63 1.0384	7.66 1.0325 14.94 .0647
18,60 1,0749	28.00 .1271
	51.06 .2511
Gerlach, 1889	
	- 1055
15°	Levien, 1955
0 0,99910 10,16 1,04258	
15.23 .06514	25° 1 8722 1.00471 10.202 1.03989
30.46 .13827 91.41 .55200	3.7022 .01222 14.248 .05693
	5.1469 .01820 19.258 .08074 7.2430 .02717
Linebarger, 1898	
% d % d	Taimni, 1929
15°	- K - T - T - T - T - T - T - T - T - T
0 0.9991 31.11 1.1301 6.12 1.0223 43.52 .1865	45° 40° 35° 30° 25° 20° 61.7 9100 10800 12900 15800 19400 24600
8.03 .0313 58.00 .2656 18.05 .0708 64.53 .2990	64.1 11400 13600 16600 20600 25800 33100
18.05 .0708 64.53 .2990 29.96 .1243 65.08 .3011	65.2 _ 15900 19500 24000 30600 39900 67.4 16500 20800 26000 33200 43200 56800
Jones, 1904 and Jones and Getman, 1904	Levien, 1955
M d M d	m η(water=1) m η(water=1)
0°	25°
0.05 0.993624 0.6 1.042828 .10 1.004848 0.8 .059062	0.12092 1.0539 0.7533 1.3753
.20 .011476 1.0 .073460 .40 .033020	.20890 .0948 0.9489 .4885 .39990 .1875 1,2602 .6802
Varga, 1911	Traube, 1885
% d % d	% o
18°	15°
0.3647 1.000002 22.3225 1.089852 0.8116 .001709 28.4235 .116825 1.5218 .004452 36.0234 .151823 3.4571 .012014 42.9956 .185407 5.7139 .020850 43.9391 .190085	9,63 18,60 69,35
3.4571 .012014 42.9956 .185407 5.7139 .020850 43.9391 .190085	
1 8.5/54 .052256 47.0661 .205/15	
11.8228 .045471 50.7597 .224534 15.6655 .061442 100 .542	

Linel	arger, 189	8			Levien	1055		
K	σ	%	σ		II	apparent m	olar M	apparent molar
		15°			М	conductivi		conductivity
0	75.49 69.35	31.11	65.41		I		25°	
6.12 8.03 18.05 29.96	69.35 68.91 66.27 65.46	43.52 58.00 64.53 65.08	65.17 65.19 65.18 65.19		0.01799 .04493 .06420 .11220 .16030	47.57 40.12 30.58	0.2803 .4004 .7000 1.0000	15,26 10,46
Guil	aume, 1946							
# # # # # # # # # # # # # # # # # # #	*(α) _{magn.106}	5780Å n		Telkess	y, 1911		
7.66		20° 3,866	1,3	438			4	,,
14.94 28.00		.759 .564	. 3.	533 725	8	U	**	U
51.06		203		106			emperature	0.7///
* in r	adians, ga	uss, centi	m.		4.934 9.799	0.9629 .9313	47.808	0.7666 .7302
Barbi	er and Rou	x, 1890		-	20.642 30.165	.8719 .8217	56.019	.6977
С		t	dispersive	e power				
9.14 27.43 36.57		10.7 11.5 10.8	0.359 .385 .398		II	is and Guck	er, 19 2 5	
45.71		10.9	.409		t	4 14		
Jones,	1904 and	Jones and	Getman, 1904		16 18 20	4 mol%	0.82080 .82193 .82327	
М	nol.cond.	M	moi.cond.					
0.05 .10 .20 .40	24.20 17.60 13.04 7.49	0.6 0.8 1.0	6.99 5.33 4.23					
Tamma	nn and Tofa	aute, 1929						
P Kg	t		Dλ/λ.100					
		1.0N	2.0N	4.0N				
500	20	17.6	16.8	15.9				
1000	40 20 40	15.0 35.0	$15.0 \\ 33.3 \\ 30.7$	14.8 29.4				
1500	20 40	30.2 53.9 46.9	33.3 30.7 52.4 46.6	28.2 44.9				
2000	20 40	73.0 63.4	71.2 63.1 90.1	42.9 60.3 57.7				
2500	20	93.0 81.5	90.1	77.0				
3000	40 20 40	114.6 98.7	79.5 110.0 96.0	72.4 93.4 88.6				
								when the same

Water + Trifluoracetic acid (C ₂ HF ₃ O ₂) Swarts, 1922 5 b.t. 5 b.t. 0 100 32.55 100.78	% f.t. % f.t. ice 65.37 -15.9 29.89 -4.95 56.38 -11.1 16.11 -2.75 55.66 -11.9 8.45 -1.60 47.10 -8.25
18.97 100.25 52.69 101.70 19.95 100.36 75.14 105.10 20.21 100.35 79.40 105.45 23.31 100.40 100.00 72.40 26.75 100.55	Aumeras and Minangoy, 1948 (fig.) f.t. I II. III
Cady and Cady, 1954 mol%	20 -3.5
m f.t. m f.t. 0.0878 -0.34 2.300 -7.32 .2397 -0.50 2.571 -8.20 .1832 -0.68 2.929 -9.22 .2955 -1.03 3.949 -12.52 .7206 -2.36 4.146 -13.20 .8164 -2.70 4.381 -13.92 1.134 -3.75 5.098 -16.10 .603 -5.12 5.997 -19.38 .884 -6.00 6.541 -21.53	Le Blanc, 1889
Water + Monochloracetic acid ($C_2H_3ClO_2$) Pickering, 1891 # f.t.	Charpy, 1893
I II III IV 100 61.18 56.01 - - 97.51 - 51.40 - - 96.19 52.13 47.74 - - 93.96 - - 41.4 - 92.41 44.32 38.63 - - 87.67 - - - 16.8 87.67 - - - - 81.46 20.12 15.88 - - 80.36 - - 3.1 - 76.52 11.22 5.48 - - 73.38 - - - - 71.00 -0.40 -3.70 - - 60.83 -13.50 - - -	Humburg, 1893 # d 16° 13,2168 1.0485 20,4558 1.0770

Le Blanc and Rohland, 1896	Drucker, 1905
% d	% п % п
20°	25°
10.11 1.0354 19.60 1.0711	0 47.0 49.69 42.7 20.82 46.1 62.10 44.2 35.53 42.7 79.96 45.0
Drucker, 1905	Somogyi, 1916
c d c d 25° 35° 25° 35°	% t capillary rise
0 0.99707 0.99409 60.01 1.24098 1.22934 3.348 1.00908 1.00550 72.11 .29702 7.698 .02484 .02100 87.38 .36920 .35640 10.090 .03387 .02959 95.41 .39060 .37950 31.540 .14651 .11029 95.96 31.540 .19412 .18510	1,720 19.1 83,45 3,440 19.0 79.60 6,880 18.2 74.00 10.509 18.2 69.35 14.582 18.2 65.00 20.907 18.1 60.50
	La Diago None
Waring Staingiger and Harry 1949	Le Blanc, 1889
Waring, Steingiser and Hyman, 1943	<u> </u>
25°	20° 31.90 1.36650
1.90 1.0316	
4.19 .0770 13.00 .1580	Le Blanc and Rohland, 1896
	₹ n _D
Turbaba, 1890	20°
mol% a.107 b.109	10.11 1.3434 19.60 .3534
2 1095 4925 4 2310 4260 8 3970 3400	
$Vt (0 - 30^\circ) = 1 + at + bt^2$	Waring, Steingiser and Hyman, 1943
	mo1% n _D
Drucker, 1905	1.90 1.3435 4.19 .3550 13.00 .3775
^{25°} 35° 25° 35°	
	Humburg, 1893
3.348 67.40 66.20 49.97 48.35 47.55 7.698 62.15 61.05 60.01 47.45 46.20 10.090 59.75 58.75 72.11 45.75 44.79 31.540 51.05 50.30	% (a) mol magn.
31,540 51,05 50.30	16°
	0 1.0000 13.2168 3.8060 20.4558 3.8391

Water + Dichloracetic acid ($C_2H_2Cl_2O_2$)	10/2
P. L. 1991	Waring, Steingiser and Hyman, 1943
Pickering, 1891	mol% d
% f.t. % f.t. 7,35 -1.25 70,27 -18.2 17,59 -3.15 75,42 -29.2 37,79 -6.05 92.47 -16.8 53,14 -9.20 96.86 0.7 63.46 -12.40 100.00 +10.7	2.99 1.0869 6.92 .1555 23.30 .3470 58.40 .4921 80.95 .5339
Le Blanc, 1889	Drucker, 1905
200	π % π
0 0.99823 20.79 1.09336	25° 20.81
	% o
Le Blanc and Rohland, 1896	25° 35°
% d	3.170 62.60 62.25
20° 20.79 I.0934 29.82 I.1369	6,600 55,50 55,05 13,03 45,00 44,80 47,93 41,10 40,80 98,42 37,40 36,05
Drucker, 1905	Le Blanc, 1889
c d c d	20°
25° 35° 25° 35° 0 0.99707 0.99409 13.28 1.05640 1.05194 3.17 1.01188 1.00788 47.93 .22953 .22088 6.60 .02479 .02093 68.44 .34872 .33743 13.03 .05539 .05104 98.42 .54249 .54249	0 1.33325 20.79 1.35756
	Le Blanc and Rohland, 1896
Friends and Pr. 1, 1999	g n _D
Frivold and Rund, 1932 # d # d	20°
18° 0 0.99870 25.641 1.11794 1.774 1.00693 37.556 .17723 3.852 01622 52.473 .25973 7.659 .03299 100 .56100	20.79 1.3572 29.82 1.3686
12.687 .05633	

Frivold and Rund, 1932	Le Blanc, 1889					
% n	% d					
C D F	20°					
18° 0 1.33130 1.33315 1.33730 1.774 .33355 .33540 .33959 3.852 .33599 .33793 .34209	14.13 1.07369 30.11 1.16168					
3,852 33599 33793 34209 7,659 - 34218 34644 12,687 34618 34815 35252 25,641 36169 36372 36828 37,556 37589 37813 38294 52,473 39576 39812 40327 100 46380 46651 47285	Humburg, 1893 % d					
	16° 10.4288 1.0528 20.6568 1.1094					
Waring, Steingiser and Hyman, 1943						
mol% n _D						
25°	Charpy, 1893					
2.99 1.3533 6.92 .3734	% d % d					
6.92 .3734 23.30 .4215 58.40 .4530 80.95 .4611	0 0.9987 65.1253 1.4156 21.2652 1.1203 76.2650 .5051 36.8381 .1280 86.3485 .5910 52.6315 .3223					
Water + Trichloracetic acid (C ₂ HCl ₃ O ₂)	Drucker, 1905					
Pickering, 1891	c d c d					
% f.t. % f.t.	25° 35° 25° 35°					
6.05	0 0.99707 0.99409 40.16 1.21813 1.20972 3.196 1.01317 1.00916 71.15 .42672 .41437 3.819 .01663 .01275 86.84 .54781 .53479 8.557 .04045 .03663 95.19 .62040 .60730 15.560 .07750 -					
	Zecchini, 1905					
	% t d % t d					
Kendall and King, 1925 mol% f.t. mol% f.t.	0 20 0.99823 27.257 19.8 1.14742 10.157 19.9 1.05090 41.949 20.2 .23408					
0.277 -0.530 1.439 -2.697 0.528 -0.994 1.722 -3.223 0.765 -1.451 2.032 -3.791 1.002 -1.884 2.293 -4.256 1.264 -2.373 2.541 -4.697	17.148 19.7 1.08931 57.879 19.7 .34088 					

de Kolossowsky, 1925	Drucker, 1905
t d t d	% п % п
24,31% 16,09%	25°
9.00 1.131 9.40 1.084 17.05 .129 11.45 .084 24.00 .128 17.75 .082 29.00 .127 24.90 .081 30.50 .080	0 47,0 30,75 44.9 10.34 46.4 52.98 47.3 22.20 45.1 74.57 52.1
	de Kolossowsky, 1925
Schreiner, 1928	t n t n
M d M d	24, 31% 16, 09%
18°	9.00 2504 9.40 2019
0.119 1.00827 1.520 1.11770 .316 .02406 1.926 .14750 .382 .02939 2.644 .19810 .475 .03656 3.080 .22864 .600 .04681 3.479 .25514	17.05 1888 11.45 1884 24.00 1535 17.75 1548 29.00 1337 24.90 1268 30.50 1109
.757 .05910 3.982 .28931 1.011 .07869 5.134 .36471 1.026 .08004	Schreiner, 1928
	M n(water=1) M n(water=1)
Frivold and Rund, 1932	18°
7 d % d 18° 0 0.998622 13.779 1.08150 2.882 1.012890 35.279 .19312 6.884 1.033730 44.761 .25163	0.105 1.045 1.926 1.910 .382 .156 2.644 2.338 .600 .256 3.080 2.614 .757 .312 3.479 2.893 1.011 .445 3.982 3.331 1.520 .705 5.134 4.370
	Drucker, 1925
Turbaba, 1890 mo1% a.107 b.109	% o % o
	25° 35° 25° 35°
0.5 8 5662 1.0 551 5246 2.0 1526 4826 4.0 3500 3419 v_{+} $(0 - 30^{\circ}) = 1 + at + bt^{2}$	3, 196 67.75 66.35 40.16 41.60 39.90 3, 813 66.80 65.10 71.15 38.22 37.20 85.57 58.10 56.10 86.84 36.80 36.15 15,560 49.65 47.75
	Le Blanc, 1889
Waring, Steingisen and Hyman, 1943	% n _D
maring, Steingisen and Hyman, 1945	20°
25°	
1.72 1.0610 3.73 .1375 5.22 .1685	14.13 30.11 1.37346

Zecchini, 1905	Kendall and King, 1925
$\%$ t n_{D} $\%$ t n_{D}	mo1% и mo1% и
0 20 1.33298 27,257 19.8 1.37006 10.157 19.9 .34616 41.949 20.2 .38968 17.148 19.7 .35577 57.879 19.7 .41300	0.212 247.3 0.738 723.5 .270 308.2 0.907 844.8 ? .475 502.7 1.507 1177.0 .524 548.9
Frivold and Rund, 1932	Schreiner, 1928
% C p	M λ M λ
18°	18°
1 1.33130 1.33315 2.882 .33496 .33(87 6.384 .34023 .34214 13.779 .35218 .38091 35.279 .37364 .39385 44.761 .39159	0.105 300 1,926 116 .382 252 2.644 79 .600 227 3.080 61.5 .757 209 3.479 50 1.011 185 4.982 37 .520 142 5.134 18
Waring, Steingisen and Hyman, 1943 mol% n _D	Water + Monobromacetic acid ($C_2H_3BrO_2$) Charpy, 1893
25°	% d % d
1,72 1,3494 3,73 ,3760 5,22 ,3767	0° 0,9987 52,3582 1,3859 16,2377 1,0974 61,3119 ,4784 29,7896 ,1932 69,2130 ,5696 42,0055 ,2913
Humburg, 1893	
$\%$ (α) $^{\text{mol}}_{\text{magn}}$.	Humburg, 1893
0 1,0000	β d (α)mol magn.
10.4288 6.5258 20.6568 6.5342	16°
Whetham, 1897	0 0.9990 1.0000 19.9427 1.1161 5.7619 30.9545 1.1913 5.7079
% и % и	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Traube, 1896 15° 11.132

Somogyi, 1916 t a² 1.185 19.9 7.305 2.370 19.9 6.825 4.739 19.9 6.364 11.132 19.8 6.139 20.474 19.8 5.633 29.372 20.3 5.394 mol% a² 0.0312 20° 6.460 .0625 6.460	Water + Trichlorbutyric acid (C ₄ H ₅ Cl ₃ O ₂)
.1250 5.640	Le Blanc and Rohland, 1896
	% d n _D
Water + Tribromacetic acid (C ₂ HBr ₃ O ₂)	20°
Charpy, 1893	0 0.9982 0.9982 15.34 1.0570 1.3519 18.08 1.0670 1.3549
% d % d	
0° 0 0.9987 46.9183 1.4238 15.1337 1.1094 54.7900 .5280 27.5940 .2175 61.5850 .6300 38.0610 .3222	Water + Trichloracrylic acid ($C_3HCl_30_2$) Boeseken and Carriere, 1915
	wt% mol% f.t. wt% mol% f.t.
Humburg, 1893	0.00 0.00 0 70.25 19.52 15.3 1.33 .14 -0.267 71.87 20.78 15.9 2.01 .21 -0.357 75.34 23.88 16.9 4.50 .50 -0.6 E 77.05 25.64 17.3 4.71 .51 +2.8 - 30.60 17.0 E 7.25 .80 +37.8 77.97 26.66 11.2 10.14 1.15 46.6 79.09 27.96 12.7 18.77 2.32 54.1 80.38 29.61 14.9 28.97 4.02 57.8 81.78 31.54 17.7 39.92 6.39 60.0 81.91 31.73 18.9 40.03 6.42 60.85 82.77 33.03 20.3 44.37 7.57 60.85 85.23 37.19 26.5 46.75 8.27 60.85 87.23 41.23 32.8
Water + α -Brompropionic acid ($C_3H_50_2Br$) Hantzsch and Dürigen, 1928	64.08 15.49 19.5 96.44 73.53 60.5 67.15 17.35 14.7 100.00 100.00 72.9 C.S.T. 7.5 mol% 60.85° L ₁ +L ₂ + (5+2) 15.5 mol% 13.7°
% d n _D	(5+2) f.t. = 19.2°
20° 7.8404 1.0310 1.34070 14.566 .0639 .34769 22.179 .1023 .35579 100 .6680 .46987	

	Water Clycine (C H NO)
W	Water + Glycine ($C_2H_5NO_2$)
Water + Chlorsuccinic acid d + 1 ($C_{i_{\mu}}H_{7}O_{i_{\mu}}C1$)	Tammann, 1915
Machtelinckx, 1951	% P
% f.t. E	10.66 640.9
3.8 -0.52 - 7.5 -1.01 -	21.51 618.2 35.56 574.8
7.5 -1.01 - 12.19 -1.60 -1.39 13.70 -1.75 -1.39	
17.90 -2.03 -1.39	1011111000
	Dalton and Schmidt, 1933 f.t. f.t. f.t.
Water + Cyanacetic acid ($C_3H_2NO_2$)	
	13.81 5 28.11 50 15.28 10 29.66 55
Traube, 1896	16.68 15 31.16 60 18.38 20 32.59 65
% d	H 21.62 30 35.23 75
15°	23.26 35 40.18 100 24.87 40
0 0.9991 4.734 1.01309 9.720 1.02714	
16.982 1.04721	Dunn, Ross and Read, 1933
	% f.t.
Somogyi, 1916	
% t a ²	20.20 25 28.65 50
1.117 19.7 7.231	36.51 75 42.93 100
4.734 19.7 6.999 9.720 19.7 6.756 16.982 19.5 6.577	
16.982 19.5 6.577	Dalton and Schmidt, 1933
mol% a²	% d % d
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	25°
0.25 7.140	1.33 1.00227 10.48 1.04171 2.42 .00728 11.81 .04736
	3.07 .01003 13.27 .05378 4.20 .01487 14.44 .05871
	4.88 .01888 15.68 .06408 5.92 .02212 17.18 .07011
	6.88 .02626 18.96 .07818 8.35 .03257 20.41 .08450 9.21 .03618

Gucker, Ford and Mo	oser, 1939		Uodos+m	and 1022			
M m d	M m	d		and, 1922	r=1\		
	25°		N	η (wate: 18°	r=1) 40°		
.20112 .20348 .00 .40024 .40853 .00	97074 0.6010 0.6190 1 00180 0.8918 0.9311 00286 1.0003 1.0496 03486 .2001 .2701 19746 .7991 .9629 15898 2.3976 2.6972	1.01590 .02476 .02810 .03434 .05163 .06890	0.4 1.0 2.0	1.055 1.153 1.362	0.6550 0.7235		
		===	Gucker,	Ford and	Moser, 193	19	
Jacobson, 1951			M (25°)	m	5°	บ 25°	40°
M d	π sound velocity						
20° 0.000 0.9982 .193 1.0043 .323 .0084 .383 .0103 .505 .0141 .619 .0175 1.177 .0346 2.000 .0587 2.561 .0743	# # # # # # # # # # # # # # # # # # #		0.0000 .0983 .1002 .1995 .2989 .2997 .3995 .6010 .8918 1.2001 1.7991 2.3976 2.6950	0.0000 .0990 .1009 .2019 .3042 .3055 .4078 .6190 .9311 1.2710 1.9629 2.6972 3.0792	1.00000 0.99211 - 0.97713 0.95604 .93727 .91886 .88624	1.00000 0.99353 	1.00000 0.99387 0.98201 0.96487 .94901 .93315 .90421 .87767
Bridgman and Dom, P Kg 0% 0.5 N	1935 d 1.0 N 1.5 N 2.0 N	2.5 N		+ Alanine n, 1915	(C₃H ₇ NO₂)	
3 0 0070 1 01269	1.02822 1.04303 1.5775	1 07281	%		p		
1 0.9970 1.01268 250 1.0072 .0233 500 .0169 .0333 750 .0266 .0424 1000 .0362 .0532 1500 .0533 .0677 2000 .0689 .0825 2500 .0832 .0969	.0402 .0540 .0681 .0520 .0643 .0782 .0629 .0740 .0877 .0734 .0836 .0972 .0920 .1021 .1159 .1096 .1192 .1380 .1414 .1354 .1490	.0832 .0939 .1042 .1142 .1324 .1489 .1646	12.09 25.83 33.55	100°	740.6 709.5 686.8		
3000	.1692 .1510 .1645 .19491908 .21912143	.2066					
	75°				and Smith,		
500 0.9945 1.0082 750 1.0031 .0167 1000 .0116 .0251 1500 .0278 .0419 2000 .0440 .0571 2500 .0589 .0718 3000 .0724 .0856 4000 .0968 .1096 5000 .1188 .1303 5000 .1393 .1488 7000 .1497 .1661 8000 .1752 .1822	1 .0244	7 .1051 7 .1216 7 .1216 1367 1.1506 7 .1773 6 .2015 6 .2243	1.189 282 339 491 569 620 1 - suc 2,3,4 -		m ₃ 1.308 1.510 .673 .766 .830 d (-), 1	m ₄ 1.304 .417 .511 .672 .763 .830 (+) and d1	•

				Dalton a	nd Schmid	t, 1933		
Water + α-A	lanine dl (C	H ₇ NO ₂)		*		.t.	*	f.t.
Dalton and	11.29		0	17.11 17.87	45 50			
*	f.t.	%	f.t.	11.84 12.41 13.01		5 10 15	18.67 19.52	50 55 60
10.79 11.43	0 5	17.79 18.75	45 50	13.63 14.27		20 25 30	20.38 21.27	65 70
12.11 12.80	10 15	19.76 20.81	55 60	14.94 15.64 16.37		30 35 40	22.19 27.16	75 100
13.55 14.33 15.14	20 25 30	21.87 23.01 24.17	65 70 75	*			8	đ
15.98 16.87	35 40	30.57	100			25		
				14.38 11.97		4367 3582	5.26 4.35	1.01398 1.01102
Dunn, Ross	10.23 8.22 7.37	.0	3010 2360 2082	2.92 1.75 0.89	1.00643 1.00266			
	×	f.t.		6.45		1785	U. 69	0.99990
	10.80	0						
	14.22 19.01 24.35	25 50 75		Jacobson	1051			
	29.67	100		M	d	π	sound velo	ocity
							(m/sec	
Dalton and	Schmidt, 1933			0.000	20			
× ×	đ	*	đ	0.000 .105 .197	0.9982 1.0014 .0041	45.36 44.80 44.29	1493:0 1499.6	
15.00 13.54 13.09 12.03 10.64	1.04571 .04094 .03950 .03596 .03148	7.36 5.72 4.13 2.51 1.15	1.02084 .01553 .01035 .00529	.354 .573 .841 1.223 1.579	.0085 .0146 .0221 .0321 .0420	43.49 42.38 41.10 39.40 37.89	1510.0 1525.0 1542.9 1568.1 1591.6	
9.19	.02677	1,13	,00074					
				Water + β -Alanine ($C_2H_7NO_2$)				
Water + α-/	Manine d (C ₃	HaNO2						
		, -	į	Jacobson	n, 1951		· · · · · · · · · · · · · · · · · · ·	
Pellini and	Coppola, 1914	4		М	d	π	sound ve	. *
	*	f.t.			20)°		
	11.49	.10		0.000 .115	0.9982 1.0019	45.30 44.68	1494.	7
	13.17 14.81	17 30		.253 .474 .757	.0062	43.94 42.81	1503. 1518.	.6
				1.119 1.571	.0128 .0213 .0318 .0446	41.45 39.79 37.91	1537. 1560. 1589.	7 0
				2.140	.0603	35.63	1627.	Ö

				Wate	er + Aminocaproic acid (C ₆ H ₁₃ NO ₂)		
Water + Aminobutyric acid ($C_{f k}H_{f 9}{f N0}_2$)				Bridgman and Dow, 1935			
		1025		P Kg	d		
l	n and Dow,				0% 0.5 N 1 N 1.5 N		
PKg	0%	đ 0.5 N	1.5 N		25°		
<u> </u>		25°		250	0.9970 1.01041 1.02338 1.03620 1.0072 .0211 .0358 .0444		
,	0.9970		1 027/7	1 500	.0169 .0313 .0478 .0525 .0266 .0409 .0593 .0606		
250 250	1.0072	1.01075	1.03767 .0480	750 1000 1500	.0362 .0504 .0698 .0679 .0533 .0681 .0884 .0823		
500 750	.0169 $.0266$.0341 $.0439$. 0577 . 0667	2000 2500	.0689 .0849 .1049 .0954 .0832 .1001 .1203 .1076		
1000 1500	.0362 .0533	.0528 .0681	.0748 .0897	3000	.0966 .1145 .1357 .1193		
2000 2500	.0689 .0832	0827 0961	.1035 .1172	4000 5000	.14431906 .1597		
3000 4000	.0966 $.1121$.1087 .1133	.1341 .1585	6000 7000	. 1658		
5000 6000	.1443	.1156 .1175	-	8000	.20642587 .2078		
7000 8000	.1865	.1193	-		1.75 N 2.0 N 2.5 N		
0000	.2001	75°	_	250	1.04221 1.04822 1.06016 .0507 .0575 .0689		
500 750	$0.9945 \\ 1.0031$	1.0084	1.0313	500 750	.0592 .0667 .0775 .0670 .0749 .0855		
1000 1500	.0116	.0180 .0267	.0400 .0486	1000 1500	.0742 .0838 .0934 .0876 .0994 ,1062		
2000	.0278 .0440	.0424 .0568	.0645 .0787	2000 2500	. 0999 . 1138 . 1210 . 1059 . 1265 . 1342		
2500 3000	.0589 .0724	.0707 .0833	.0916 .1049	3000 4000	. 1224		
4000 5000	$.0968 \\ .1188$	$.1060 \\ .1283$.1588	5000 6000	. 1611 . 1852 . 1860 . 1781 . 2061 . 2042		
6000 7000	.1393 .1497	.1488	-	7000 8000	. 1948		
8000	.1752	-	-				
				PKg			
Water +	Water + Aminoisovaleric acid (C _y H ₁₁ NO ₂)				0% 0.5 N 1 N 1.5N		
				500	75° 0,9945 1.0051 1.0167 1.0313		
Dunn, Ro	Dunn, Ross and Rund, 1933			750 1000	1.0031 .0148 .0280 .0395 .0116 .0235 .0386 .0474		
%		f.t.		1500 2000	.0278 .0405 .0584 .0613 .0440 .0569 .0756 .0745		
6.55		0		2500 3000	.0589 .0724 .0916 .0868 .0724 .0868 .1067 .0983		
6.92 8.62		25 50		4000 5000	.0968 .1121 .1346 .1198 .1188 .1338 .1598 .1398		
11.74 16.67		75 100		6000 7000	.1393 .1530 .1838 .1575		
=======================================		100		8000	. 1497 2061 . 1734 . 1752		
Dalton and Schmidt, 1933					1.75 N 2.0 N 2.5 N		
%	f.t.	%	f.t.	500 750	1.0366 1.0399 1.0577 .0441 .0494 .0639		
5.62	0	7.94	45	750 1000	.0514 .0577 .0718		
5.78 5.96	5 10	8.35 8.83	50 55	1500 2000	.0644 .0737 .0865 .0776 .0887 .1003		
6.16	15 20	9.32 9.89	60 65	2500 3000	.0900 .1022 .1130 .1015 .1154 .1248		
6.62 6.91	25 30	$\frac{10.51}{11.20}$	70 75	4000 5000	.1217 .1384 .1464 .1399 .1597 .1658		
7.21 7.57	35 40	15.83	100	6000 7000	.1564 .1799 .1841 .1728 .1990 .1998		
				8000	.1876 .2188 .2145		
				<u></u>			

Water + β -l-Asparagine ($C_k H_8 N_2 O_3$)				
Bresler, 1901	Water + Taurine (C ₂ H ₇ NO ₃ S)			
% f.t. % f.t.	1005			
0.69	Dalton and Schmidt, 1935 f.t. % f.t.			
1.42 7.9 16.56 71.7	% f.t. % f.t.			
2.10 17.5 20.77 07.0 3.07 28.0 34.41 98.0 5.35 41.4	3.78 0 16.15 45 4.65 5 17.95 50			
3.60 41.4	5.65 10 19.76 55 6.79 15 21.51 60			
	8.08 20 23.23 65 8.49 25 24.84 70			
Dalton and Schmidt, 1935	11.02 30 26.34 75 12.66 35 31.39 100			
f .t. f f.t.	14.37 40			
0.84 0 6.87 45				
1.09 5 8.36 50 1.41 10 10.07 55				
1.80 15 12.03 60	Water + Serine dl (C ₃ H ₇ NO ₃)			
$egin{array}{cccccccccccccccccccccccccccccccccccc$				
4.53 35 35.55 100 5.60 40	Dalton and Schmidt, 1935			
	% f.t. % f.t.			
	2.15 0 8.28 45 2.54 5 9.37 50			
Water + β -1-Aspartic acid ($C_4H_7NO_4$)	2.54 5 9.37 50 3.00 10 10.55 55 3.53 15 11.82 60			
, , , , , , , , , , , , , , , , , , , ,	1 4.12 20 13.17 65			
Bresler, 1901	4.78 25 14.61 70 5.53 30 16.12 75 6.35 35 24.38 100			
% f.t. % f.t.	7.27 40			
0.26 0.2 1.25 51.0				
.40 9.5 1.78 63.5				
.51 16.4 2.29 70.0 .75 31.5 3.10 80.5 .92 40.0 5.10 97.4	Water + Betaine (C ₅ H ₁₁ NO ₂)			
	Stolzenberg, 1914			
Water & Cluberia and dr. (a vice	% f.t. % f.t.			
Water + Glutamic acid dl ($C_5H_9NO_{1_{ullet}}$)	57.39 -8 63.85 37.5 57.59 -7 71.15 76.2			
Dalton and Sahmida 1000	61.10 +19.3 71.80 77.0			
Dalton and Schmidt, 1933 # f.t. # f +	60.78 +19.5 76.11 96.5 64.71 38.0			
7.84 0 3.98 45 1.01 5 4.71 50				
1.20 10 5.55 55 1.42 15 6.55 60				
1.89 20 7.71 65 2.01 25 9.04 70				
2.80 30 10.60 75 2.82 35 22.17 100				
3,36 40				

Water + Benzoic acid ($C_7H_6O_2$)	
Timmermans and Kohnstamm, 1909-10	Ward and Cooper, 1930
	% f.t. % sat.t.
C.S.T. limits of pressure dt/dp 118.5 5 - 200 Kg +0.0025	
Kume, 1937 t mol% 80.51 90.07 97.50 98.99 99.49 100	2.067 74.1 11.19 109.4 3.130 83.1 20.61 116.1 3.966 88.3 32.34 117.2 5.599 93.2 46.37 116.3 75.68 95.5 61.36 109.7 87.72 101.4 69.01 101.1 100.00 122.7
P P	C.S.T.: 32% 117.2°
80 0.450 0.454 0.444 0.457 0.455 - 85549	Water + o-Phthalic acid ($C_8H_6O_4$; Flaschner and Rankin, 1909-10
130 2.500 2.021 .381 .839 .537 140 3.327 2.602 .787 1.022 .655 98.1	% f.t. % f.t.
150 4.331 3.285 2.163 .248 .796 - 160 5.523 4.111 2.023 .473 .934 135.3 170 6.944 5.077 3.158 .750 1.081 - 180 8.563 6.198 3.777 .055 1.277 217.4 200 - 311.2	I II I II 100 231 - 39.6 121.2 - 75.0 162 84 28.2 111.5 - 49.3 130 27 14.4 97.0 -
Alexejew, 1886	
% sat.t. % f.t.	Ward and Cooper, 1930
3.04 64 0.5 28 4.12 79.5 1.05 47 8.28 102 3.04 82 12.20 109 4.12 88 25.01 115.5 78.8 95.5 35.98 115.5 83.3 96 49.44 114 88.3 101 61.77 107 95.3 108.5 69.40 99.5 96.3 109.5 78.80 81.0 99.1 117	\$ f.t. \$ f.t. 0.716 25.8 11.85 94.8 1.324 43.7 15.79 101.1 1.647 48.9 29.46 113.8 2.276 58.0 50.73 131.6 2.897 63.7 71.57 157.5 5.322 77.8 100.00 193.3 (decomp.) 7.594 85.7
Sidgwick and Ewbank, 1921 # f.t. 30.78	Water + Mellitic acid (C ₁₂ H ₆ O ₁₂) Guillaume, 1946 % d *() _{magn.10} 6 n 5780 Å 37.7 1.2102 3.859 1.4134 • in radians, gauss, centim.

Water + o-Toluic acid (CgHgO2	uic acid (CaHaOa)	r + o_Tolui	Water +	
--------------------------------	---------------------	-------------	---------	--

Sidgwick, Spurrell and Davies, 1915

3.08"	Ten, opu	rett und builes	, 1710	
%	sat.t.	Я	f.t.	
2.23	85.1	91.98	93.7	
3.66 5.00	109.1 118.3	93,83 95,95	94.4 96.0	
6.99 10.20	130.4 143.7	100.00	102.4	
20.23 31.47	$\substack{156.5\\160.2}$	C.S.T. =	161.2°	
39.92 48.63	$161.2 \\ 160.2$		•	
60.16 70.12	154.6 147.4	$L_1 + L_2 + C$	93.5°	
84.64 90,53	$\frac{119.8}{97.2}$		en 91.2 and 2.5	· %
			· · · · · · · · · · · · · · · · · · ·	,,-

Flaschner and Rankin, 1909-10

%	f.t.	sat.t.	
10.0 39.7 69.2 89.5 100.0	94.0 94.6 94.8 95.0 104.0	147.6 158.6 150.4 108.0	

Water + m-Toluic acid ($C_8H_8O_2$)

Sidgwick, Spurrell and Davies, 1915

- %	sat.t.	% f.t.
1.53	89.8	92.45 94.2
3.13	118.6	96.93 101.9
5.88	140.5	100.00 110.5
9.96	153.3	240,0
29.94	162.2	C.S.T.: 162.2
40.11	162.1	0.5.1 102.2
50.10	160.7	
60.15	157.7	
71.17		
	145.1	
79.57	129.6	
82.06	121.8	$L_1 + L_2 + C$ 91.8°
86.67	105.9	
89.32	96.4	between 90.5 and 1.6%
		2,000

Flaschner and Rankin, 1909-10

Z	f.t.	sat.t.	
2.6 9.9 40.0 69.6 78.3 90.6 100.0	96.0 96.0 95.5 97.6 97.4 99.6 110.0	111 153 160.4 147.0 132.6 89.4	

Water + p-Toluic acid ($C_8H_8O_2$)

Sidgwick, Spurrell and Davies, 1915

%	f.t.	%	f.t.	
1.51 2.96 4.97 10.08 20.27 30.14	114.4 133.7 141.4 150.9 157.9 L ₁ +L ₂	40.57 50.38 60.55 79.68 92.52 100.00	158.5 158.0 152.6 145.1 156.5 176.8	
			1.430	

C.S.T. = 159.1° $L_1+L_2+C = 142^{\circ}$

between 74.0 and 5.0%

Flaschner and Rankin, 1909 - 1910

R	f.t.	sal.t.
9.9 25.0 40.0 54.9 68.3 80.4 87.0	145.4 145.6 146.4 148.0 155.0 179.4	150.6 158.2 158.0 155.0 146.0

Water +	Cinnami	acid (C ₉ H ₈ O ₂)			Water 4	o_Aldehy	dobenzoic	acid (C ₈	H ₆ O ₃)
Kume, 19	937					Sidgwid	ck and Cla	yton, 19 2 2		
t			P			8	f.t.	8	f.t.	sat.t.
80 85 90 95 100 105	17.50 mol % 0.458 0.560 0.682 0.820 0.968 1.167	35.60 mol % 0.455 0.562 0.679 0.819 0.970 1.163	53.18 mo1 \$ 0.458 0.557 0.680 0.813 0.966 1.160	66.99 mol % 0.452 0.555 0.675 0.811 0.968 1.160	80.12 mol % 0.453 0.561 0.669 0.817 0.966 1.158	100 91.66 87.20 81.50	100.5 75.0 64.5 58.1	59,48 40,83 29,20 20,00 9,38	53.2 51.8 49.9 48.92 46.1	39.2 44.0 45.75 43.3 21.1
115 120 125 130 135 140 145	1.360 1.590 1.879 2.230 2.620 2.981 3.442 3.963	1.352 1.589 1.880 2.223 2.619 3.041 3.445 3.961	1.340 1.595 1.882 2.234 2.602 3.020 3.501 3.957	1.351 1.593 1.868 2.233 2.611 3.031 3.436 3.938	1.344 1.589 1.816 2:119 2.478 2.901 3.332 3.875)		ydobenzoic ayton, 192		₈ H ₆ O ₃)
150 160	4.580 5.998	4.571 5.905 7.721	4.562 5.821	$\frac{4.502}{5.813}$	$\frac{4.343}{5.511}$	%	f.t.	%	f.t	•
80 85 90 95 100	7.787 9.822 89.69 mol % 0.449 0.554 0.673	7.721 9.063 95.01 mol % 0.454 0.554 0.678 0.812 0.968	7.414 9.431 97.61 mo1 % 0.452 0.559 0.677 0.815 0.969 1.164	7.333 9.232 98.90 mol % 0.443 0.553 0.677 0.810	6.990 8.923 99.29 mol % 0.448 0.561 0.672 0.809	100 86,76 81,88 70,72 58,87	175.0 140.0 132.9 121.5 116.6	49.45 40.28 29.97 19.87 11.22 4.94	114. 113. 112. 110.	6 5 3 7 5
105 110 116 115 115 120 125 130	1.162 1.305 1.404 	1.160 1.300 1.397 1.419 1.610 1.825	1.164 1.275 1.303 1.388 - 1.400 1.341 1.514	0.970 1.159 1.277 - 1.279 - 1.398 1.295 1.051	0.965 1.156 1.276 	Sidgwi	ck and Cla	ydobenzoic ayton, 1922		^B H ⁶ O ²)
135 140 150 160 170 180	2.609 2.961 3.780 4.578 5.611 6.838	2.341 2.805 c3.433 4.141 4.965	1.908 2.238 2.712 3.279 3.932	1.283 1.473 1.755 2.076 2.585	1.009 1.065 1.255 1.482 1.752	100 79.4 49.6	250.0 191.5 181.5	32.46 19.08 10.24	158.9 150.9 142.8)) 3
t	p	t	p							
	100		. ,			Water	+ Phenylac	etic acid	(C ₈ H ₈ O ₂)
100 120 130 140	13.2 23.9 17.2 18.8	170 180 20 0	37.5 52.2 98.1				ck and Ewi			
×	sat	.t.	%	f.t			f.t.	%	sat.t	•
17.50 35.60 49.00 50.17 53.18 66.99 80.12 89.69 92.23	131 139	.5 C.S.T. .5	50.17 80.12 94.99 95.01 97.01 98.90 99.29	107. 114. 116. 119. 125. 129.	2 7 7 0 0 0	100 80.96 triple	76.7 48.5 point = 4	67.94 39.69 20.00 5.65	94.8 106.8 108.0 84.7 S.T. = 10	

Water +3 _Phenylpropionic acid (C ₉ H ₁₀ O ₂)	Flaschner and Rankin, 1909-10
nater is a meny aproprious about it against a	% f.t. sat.t. % f.t. sat.t
Sidgwick and Ewbank, 1921	
	100 156.5 - 30.1 105.2 86.9 81.3 117.8 - 22.7 104.9 87.2
% f.t. % sat.t.	65.4 108.0 65.5 13.0 103.7 84.2
100 48.6 80.30 101.5	48.9 105.8 84.4 4.6 95.0 61.2 39.5 105.5 86.2
94,92 38,5 60,16 143,5	
19.31 149.2	
5,00 119,9	
triple point 34.0° L ₁ + L ₂ + C	Sidgwick and Ewbank, 1921
C.S.T. : 150,0	% f.t. sat.t. % f.t. sat.t
	100 159.0 - 16.82 105.6 87.2
	89.75 131.8 - 8.02 101.4 77.3
	80.00 119.5 - 5.27 97.9 - 65.40 109.5 67.0 2.026 80.0 -
	48.18 107.2 86.4 0.717 56.0 -
Water + p_Methoxybenzoic acid (C ₈ H ₈ O ₂)	1
	C.S.T. : 89.5
Flaschner and Rankin, 1909-10	
% f.t. % f.t. Sat.t.	
100 184.4 50.0 145.6 137.0	Bailey, 1925
	% f.t. sat.t. %
75.0 151.0 30.0 145.0 137.6	L_1 L_2
59.4 146.0 19.7 144.4 136.0 9.0 140.0	
	0.131 10.0 60.0 4.4 69.6 .184 20.0 70.0 6.5 64.6
	1 .264 30.0 80.0 9.8 55.9
	395 40.0 85.0 15.0 46.0 592 50.0 87.0 30.0 30.0
Water + Salicylic acid (C ₇ H ₆ O ₃)	.864 60.0
Rater + Saffeyire acto (C7mgos)	
	E: 0,103% _0.07° C.S.T.
Alexejew, 1882 and 1886	
% sat.t. % f.t	
0.16 12.5	Water + m_0 xybenzoic acid ($C_7H_6O_3$)
4.57 63 1.27 66 5.90 73 2.44 81	
8.66 83.5 8.67 100	
$\begin{bmatrix} 10.80 & 85.5 \\ 13.78 & 87 & 1.05 & 8 \end{cases}$ (second method)	Flaschner and Rankin, 1909-10
14.07 87 2.07 41	% f.t. % f.t.
21.70 90.5 5.9 92	1 11 1 11
38.60 90.5 14.07 100.2 42.90 90.5 21.20 100.5	100 199.8 189 49.0 108.8 75.5
48.80 88.2 42.90 102	90.8 175.6 156 39.8 103.2 73.0
52.00 88.0 73.01 109 60.00 79.0 91.89 130	77.9 143.4 127 30.0 98.0 64.0 70.0 131.4 110.4 20.0 90.8 54.0
61.20 76.0 69.10 58.0	70.0 131.4 110.4 20.0 90.8 54.0 60.0 119.2 94.0 9.9 78.2 40.6
07410 0440	
	d d
	N .

sat.t.

sat.t.

117.7 L₁+L₂
120.2 "
131.5 "
135.6 "
142.0 "
142.5 "
138.5 "
117.5 "
106.8 "

139.4 L₁+L₂
144.6 "
144.6 "
138.4 "
125.3 "

Sidgwick and Ewbank, 1921	Water + 1,2,4-0xytoluic acid ($C_8H_8O_5$)
% f.t. % f.t. 100 201.3 25.22 93.3	Sidgwick and Ewbank, 1921
70.80 134.0 14.70 84.6	% f.t. % sat
49.85 109.8 9.85 79.6 33.85 98.3 6.11 69.0	100 177.8 54.40 139 89.68 147.8 41.46 144
Water + p-0xybenzoic acid (C ₇ H ₆ O ₃)	79.68 138.3 19.89 144 67.68 138.3 19.89 145 5.53 129.4 5.53 125 0.412 80.7 C.S.T. = 145.2 triple point = 131.0
Flaschner and Rankin, 1909-10	
% f.t. % f.t. I II I II	Water + 1,2,5-0xytoluic acid ($C_8H_8O_5$)
100 213.0 178 50.0 111.8 89 90.4 180.6 130 40.1 104.4 80 80.0 154.4 118 29.5 97.4 74	Sidgwick and Ewbank, 1921
80.0 154.4 118 29.5 97.4 74 69.2 134.0 107 19.8 90.0 64 59.6 120.0 96 10.0 77.0 55	g f.t. g sat
Sidgwick and Ewbank, 1921	100 152.5 69.29 117 89.71 126.4 67.91 120 79.66 112.0 59.85 131 77.05 109.5 55.16 135 3.16 107.0 38.85 142 0.92 85.0 24.55
\$ f.t. % f.t.	0.73 80.7 10.21 138
100 213.0 9.28 75.7 85.20 167.0 6.07 68.2 71.30 137.5 5.22 65.1 51.95 114.0 4.75 63.0 46.60 109.5 4.20 60.2	4.53 117 3.16 106 C.S.T. = 142.8 triple point = 107.8
46.60 109.5 4.20 60.2 29.47 97.0 3.20 56.0 19.66 89.6 2.08 50.9 11.85 80.1	
tr.t. (1+1) - anh. 62.0	Water + 1,3,4-0xytoluic acid ($C_8H_8O_3$)
	Sidgwick and Ewbank, 1921
Water + 1,2,3 $_{ extsf{-}}$ 0xytoluic acid ($ extsf{C}_{8} extsf{H}_{8} extsf{O}_{3}$)	% f.t. % f.t.
Sidgwick and Ewbank, 1921	100 208.5 30.23 124.2 76.98 154.0 10.33 113.1
≸ f.t. ≸ sat.t.	66.07 143.0 4.03 98.8 48.67 131.4
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	

triple point = 129.2

C.S.T. = 153.5

Water + 1,4,3-0xytoluic acid ($C_8H_8O_3$) Sidgwick and Ewbank, 1921	Water + m-Digallic acid (C _{↑4} H ₁₀ O ₉)
% f.t. % f.t.	Pickering, 1893
100 172.4 6.52 105.8 84.12 146.8 5.77 103.4 65.52 132.4 5.01 99.5 47.57 124.1 3.70 96.6 30.87 118.8 2.77 92.6 9.61 109.0 1.83 84.4 tr.t. = 99.5	# f.t. 4.92
Water + Mandelic acid I ($C_8H_8O_3$) l and rac.	Paterno and Salimci, 1913
Angus and Owen, 1943	% f.t. % f.t.
\$ 1 f.t. \$ rac f.t. 8.2 24.5 8.1 0 9.8 27.5 10.5 10	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
12.5 31.5 11.8 15 17.2 37.0 13.9 20 23.1 41.5 18.0 25 28.5 44.0 27.3 30 35.7 46.5 45.0 35 42.5 48.5 52.2 37 48.6 50.5 62.0 40 53.0 52.5 65.8 42.5 56.3 54.5 71.2 45 60.8 57.0 73.3 47 66.0 60.5 78.9 50 74.3 68.0 Water + Acetylsalicylic acid (C ₉ H ₈ O ₄)	Hager, 1876 17.5° 0 0.9987 11 1.0434 1 1.0027 12 .0475 2 .0067 13 .0516 3 .0107 14 .0558 4 .0151 15 .0600 5 .0188 16 .0642 6 .0229 17 .0684 7 .0270 18 .0726 8 .0311 19 .0768 9 .0352 20 .0810 10 .0393
% f.t. sat.t. % f.t. sat.t. 100 131.0 - 40.3 92.8 89.0 89.5 109.4 - 30.0 92.6 89.0 80.0 99.0 - 20.0 92.4 87.4 68.8 94.6 66 10.0 90.4 70.0 60.0 93.6 80 4.8 82.4 25.0 50.0 93.0 87.4	Rakshit, 1925 20° 1

Water 4		o-Chlorbenzoic	acid	(C_H_0°C1)
mater 7	•	0-Curornenzorc	acıu	١.	Chircher

Flaschner and Rankin, 1909-10

%	f.t.	sat.t.	%	f.t.	sat.t.
100 87.7 76.1 62.9	139.5 113.0 104.8 104.6	- 115.2	48.7 34.9 19.3 5.5	104 104.4 104 100.8	126 126.2 125.9 97.0

Water + m_Chlorbenzoic acid ($C_7H_5C10_2$)

Flaschner and Rankin, 1909-10

%	f.t.	sat.t.	%	f.t.	sat.t.
100 87.7 75.8 60.2	156.0 129.5 123.8 123.9	116 136	51.3 34.3 18.9 4.2	123.8 123.9 123.8 123.0	142.6 142.8 142.0 122.0

Water + p-Chlorbenzoic acid ($C_7H_5O_2C1$)

Flaschner and Rankin, 1909-10

%	f.t.	%%	f.t.
100	240	40.0	186.0
83.0	204	30.0	185.6
70.2	192.0	19.8	183.8
59.5	189.0	10.0	180.0
50.0	187.0	3.0	162.0

Water + p-Brombenzoic acid (C7H3BrO2)

Flaschner and Rankin, 1909-10

Ж	f.t.	76	f.t.	_
100	254	40.0	197.4	
87.6	218	30.0	196.4	
70.0	204	20.0	195	
60.0	199.6	10.0	189	
49.5	198.2	3.0	169	

Water + p_Iodbenzoic acid (C7H5102)

Flaschner and Rankin, 1909-10

%	f.t.	%	f.t.	
100	270	40	209.8	
86.6	228	30	208.8	
75.2	219	20	206.6	
60.0	214	9.8	199.6	
50.0	212	3.0	178	

Water + o-Aminobenzoic acid (C7H7NO2)

Flaschner and Rankin, 1909-10

%	f.t.		sat.t.	
	I	II		
100	144.6	115	_	
95	128.4	94		
87.2	116.2	83	_	
80.0	112.0	75	_	
69.7	107.8	72	_	
67.0		_	73.0	
59,4	105.6	~	75.8	
49.4	105.0	_	78.0	
38.0	104.4	-	78.0	
30.6	103.4	~	78.0	
18.5	101.4	_	74.6	
9.9	95.8	-	62.4	
4.8	83.6	_	,	

Zuravlev, 1938

%	sat.t.	%	sat.t.	
70.0 59.6 43.6 35.6	71.0 76.2 78.3 78.5	24.7 14.8 10.0	78.0 70.0 62.1	

Water + m_Aminobenzoic acid (${ m C_7H_7NO_2}$)	Water + m_Nitrobenzoic acid (C ₇ H ₅ NO _{1,})
Flaschner and Rankin, 1909-10	Timmermans, 1909-10
% f.t. % f.t.	C.S.T. limits of pressure dt/dp
100 174.4 39.3 116.5 94.2 156.6 30.0 113.8 85.7 143.0 19.9 109.2 77.1 133.0 8.9 99.0 61.2 123.2 4.6 77.8 52.1 120.2	107.3 5 - 125 Kg +0.008
	Sidgwick and Ewbank, 1921
Water + p-Aminobenzoic acid (${ m C_7H_7N0_2}$) Flaschner and Rankin, 1909-10	# f.t. # sat.t. 100 141.4 60.85 97.7 89.76 104.8 40.31 108.4 79.52 85.4 19.85 107.8 9.90 99.3 4.57 79.3
% f.t. % f.t.	triple point = 76.8
100.0 186.0 50.2 115.2 94.5 158.0 39.5 112.2 88.0 144.8 30.0 109.0 80.0 132.0 20.1 103.6 68.2 123.4 10.0 94.0	Alexejew, 1886
60.1 119.2 5.0 82.2	% sat.t. % sat.t.
Water + o_Nitrobenzoic acid (C ₇ H ₅ NO ₄)	60.45 99.0 6.9 90.5 55.78 103.0 4.06 76.0 40.18 107.5 3.69 73.5 21.30 103.5 3.05 66.0 11.38 101.0
Flaschner and Rankin, 1909-10	
% f.t. sat.t. I II	Flaschner and Rankin, 1909-10
100 148.0 130 - 94.3 121.4 108 -	% f.t. sat.t. % f.t. sat.t.
87.0 105.0 87	100
Sidgwick and Ewbank, 1921	
% f.t. % f.t.	
100 146.8 39.92 78.0 90.38 110.4 19.24 77.5 79.32 90.5 9.48 75.3 59.85 79.5 1.85 49.5	

Water + p-Nitrobenzoic acid ($C_7H_5N0_4$)	Water + Methylsulfonic acid ($ ext{CH}_{4} ext{O}_{3} ext{S}$)
Flaschner and Rankin, 1909-10	Berthoud, 1929
% f.t. % f.t.	mol% f.t. mol% f.t.
I II I II 100 237.0 235 39.7 162.6 150.6 87.0 198.0 188.5 30.0 160.4 147.0 78.4 182.5 172.5 19.6 157.4 145.6 70.5 174.4 162.6 10.0 151.4 139.0 60.0 167.4 156.0 5.0 143.0 128.0 49.6 164.2 153.0	0.79 -1.8 36.9 -30.9 5.75 -17.0 40.3 -15.3 8.15 -27.5 45.5 +1.5 11.1 -42.0 47.8 +9.8 (3+1) 13.5 -57.4 51.7 +11.0 16.4 -75.0 52.9 +10.7 18.2 -67.6 61.8 -3.2 19.1 -64.0 76.3 -12.0 (1+1) 24.4 -53.5 77.5 -14.5 25.8 -51.7 78.0 -15.0
Sidgwick and Ewbank, 1921	27.6 -52.0 78.6 -13.6 31.0 -54.0 83.3 -8.5 31.5 -54.5 89.2 +6.0 32.1 -51.0 100.0 +20.0
% f.t. % f.t.	
100 242.4 18.50 158.8 79.22 184.8 9.17 153.0 59.21 168.6 0.88 177.0(?) 38.30 163.5	Water + Ethylsulfonic acid ($C_2H_6O_3S$)
	Berthoud, 1929
Water + 1,3,5-Dinitrobenzoic acid (C ₇ H _h N ₂ O ₆)	mol% f.t. mol% f.t.
Timmermans, 1907 C.S.T. limits of pressure dt/dp 123.3 (0 - 110 Kg) +0.006	3.3
	45.5 +4.3 86.0 -25.0 48.0 +5.1 90.4 -21.0 50.5 +5.4 100.0 -17.0
Flaschner and Rankin, 1909-10	Water + Dodecylsulfonic acid (C ₁₂ H ₂₆ O ₃ S)
\$ f.t. sat.t. \$ f.t. sat.t.	
100 206 - 40 122 123.6 90.9 160 - 30 122 123.8 80.2 132 96 19.8 121.6 122.0 67.4 123.2 114.0 10 120.4 111.4	Vold, 1941 % f.t. % f.t.
60.0 122.4 120.2 4.4 113 87.0 ====================================	100 74.0 88.9 24.0 99.2 59.0 85.4 23.5 (1+1) 98.3 53.0 75.4 22.0 97.9 51.0 73.9 20.5 95.8 43.0 65.2 18.0 94.8 44.5 65.0 19.5 94.1 45.5 61.4 15.5 93.9 45.5 59.9 15.5 93.1 45.5 53.3 9.5 92.6 45.5 55.2 8.5 91.1 45.5 50.9 5.5 91.2 43.5 47.6 4.0 89.8 39.0 36.9 .0.5

%	t ₁	t ₂	*	t ₁	t ₂
63.9	15.5	45	58,6	32	114
61.7	15.5	83	56.3	7 0	130.5
61.4	15.5	85	53.3	115	145
59.8	18.0	100			

- t₁ = temperature at which pseudo-isotropy appears
 on heating
- t_2 = temperature at which pseudo-isotropy appears on cooling

Water + Benzenesulfonic acid ($C_6H_6O_2S$)

Hantzsch and Durigen, 1928

%	đ	n _D	
	20°		
71.059 70.820 69.793 66.036 60.307 9.7160 8.0816 5.5390	1.27465 .27440 .26970 .25380 .23124 .0370 .0306 .0133 0.99537	1.48520 .48462 .48220 .47331 .46055 .34950 .34666 .34228 .33350	

Kohner and Gressmann, 1929

wt%	mo1%	d	n _{He}
		25°	
21.3552 22.0450 25.6463 31.0928 36.7804 43.1791 53.3061 60.9420 63.4413 66.0730 71.5840 71.9933	3.00 3.12 3.78 4.89 6.22 7.97 11.51 15.09 16.51 18.16 22.30 22.65	1.07426 .07686 .09073 .11201 .13473 .16082 .20280 .23531 .24595 .25646 .27932 .28105	1.37328 .37467 .38208 .39352 .40586 .42015 .44335 .46158 .46758 .47361 .48671 .48771

Water + m-Benzenedisulfonic acid ($C_6H_6O_6S_2$)

Bonner, Holland and Smith, 1956

m	osmotic coeff.	m	osmotic coeff.	
	25	0		
0.1 .2 .3 .4 .5 .6	0.891 .905 .937 .968 .997 1.027	0.8 0.9 1.0 .2 .4 .6	1.088 .120 .151 .222 .293 .362 .437	

Water + 4,4'-Dibenzyldisulfonic acid ($C_{1\mu}H_{12}O_6S_2$)

Bonner, Holland and Smith, 1956

th	osmotic coeff.	m	osmotic coeff.	
	2	5°		
0.1 .2 .3 .4 .5 .6 .7 .8	0.857 .813 .800 .792 .786 .782 .784 .796 .807	1.0 .2 .4 .6 .8 2.0 2.2 2.4	0,822 .857 .899 .944 .992 1.042 .098 .161	

Water + 2,5-Dimethylbenzenesulfonic acid ($C_8H_{10}O_3S$)

Bonner, Holland and Smith, 1956

m	osmotic coeff.	m.	osmotic coeff.
	25	o	
0.1 .2 .3 .4 .5 .6 .7 .8 .9 1.0	0.913 .885 .864 .844 .826 .811 .795 .782 .771 .771	1.4 1.6 1.8 2.0 2.5 3.0 3.5 4.0 4.5 5.0	0.728 .721 .718 .713 .709 .711 .718 .734 .752 .774

Water + Naphthalene- eta -sulfonic acid ($C_{10}H_80_3S$)	Water + 10 -Bromphenanthrene-3 (or 6) -sulfonic acid ($C_{14}H_9O_3BrS$)
Gill and Thornton, 1953	5-1-1-1-1
% f.t. % f.t.	Sandqvist, 1916
11.0	mol% clearing point f.t. 26.35
Triple point (water) 0 0.008 4.58	
E (water) - (8+1) 33.5 -5.02 2.35	mol % d
E (1+1) - anh. 98.8 +97.0 10	18°
tr.t. (8+1) - (5+1) 48.5 20.5 15.8	L - 1
tr.t. (5+1) - (3+1) 67.4 57.8 96	0.987 1.0723 0.775 .0569 0.609 .0454
tr.t. (3+1) _ (1+1) 78.9 81.4 168	0.479 .0360
f.t. (1+1) 96,02 125,9 207	0.381 .0290
f.t. anh. 100 104 -	
	N mol % d η (water=1) κ
Water + Phenanthrene-sulfonic acid ($C_{14}H_{10}O_{3}S$)	18° 0.508 1.005 1.0733
Bolam and Hope, 1941	0.250 0.472 .0348 1.958 407.8 0.204 0.381 .0290 1.5255 289.1
N η (water=1) N η (water=1)	0.125 0.230 .0172 1.184 229.1 0.0838 0.1533 .0113 1.093 169.1
18° 0.01021 1.006 0.08433 1.056 0.01575 1.010 0.23570 1.264 0.02341 1.015 0.34020 1.351 0.04939 1.031 0.74740 2.323	0.0625 0.1139 .0079 1.064 136.4 0.0419 0.0760 .0033 1.032 104.2 0.0313 0.0554 .0013 1.022 87.2 0.0209 0.0380 .0006 1.007 65.2 0.0156 - 0.9995 - 49.8 0.00789987 - 25.5 0.0000 0.999 0

Water + Quinic acid (C ₇ H ₁₂ O ₆)	
	U. WATER + INORGANIC AND NON METALLIC SUBSTANCES
Kanonnikoff, 1885	
% t d n $_{ m H}_{ m C}$ D $_{ m H}_{ m eta}$	LXVI. WATER + ELEMENTS AND HYDRIDES .
17.95 19.2 1.06986 1.359310 1.361310 1.365840	
	Water + Deuterium (D ₂)
	Silverman and Bradshaw, 1954
Thomsen, 1887	
β d (α) _D	Density is additive .
20°	
9,93 1.0365	Water + Chlorine (Cl ₂)
	Isambert, 1878
	t p dissoc. t p dissoc.
Water + Pyrrolidon-5-carboxylic acid 1 (C ₅ H ₇ NO ₂)	0 230 8.8 722 3.3 375 9.1 776 3.6 400 9.5 793 5 481 10.1 832
Froentjes, 1943 (fig.)	1 5.7 530 11 950
w.l. (in Å) rotation (in degrees) 1% 2% 10% 40%	6.6 571 11.7 1032 7.2 595 12.9 1245
	7.2 595 12.9 1245 7.6 644 14.5 1400 8 671
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
5000 -12.5 -11.5 -10.0 -9.0 5500 -13.5 -12.5 -10.5 -9.5 5000 -14.0 -10.5 -8.5 -6.0	Le Chatelier, 1884
	t p dissoc. t p dissoc.
	9 746 -2 230
Water + Methylboric acid ($ ext{CH}_{ extsf{f}} extsf{0}_2 ext{B}$)	9 746 -2 230 8 700 -3 210 3 420 -4 205 1 340 -5 146
	0 320 -6 153
Burg, 1940	-1 290
Dissociation in the gaseous state	t p t p
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	-3.5 262 -14 175
	Roozeboom, 1884
	t p dissoc. t p dissoc.
	0.0 249 9.0 701
	2.0 320 10.0 797 4.0 398 12.0 992
	8.0 496 14.0 1240 8.0 620 16.0 1522

WATER + QUINIC ACID

Water + Quinic acid (C ₇ H ₁₂ O ₆)	
Kanonnikoff, 1885	U. WATER + INORGANIC AND NON METALLIC SUBSTANCES
% t d n	LXVI. WATER + ELEMENTS AND HYDRIDES .
H _α D Hβ	
17.95 19.2 1.06986 1.359310 1.361310 1.365840	Water + Deuterium (D ₂)
	Silverman and Bradshaw, 1954
Thomsen, 1887	
β d (α) _D	Density is additive .
20°	
9,93 1.0365 -43.64 19,74 .0780 -44.03 29,50 .2220 -44.09	Water + Chlorine (Cl ₂)
	Isambert, 1878
	t p dissoc. t p dissoc.
Water + Pyrrolidon-5-carboxylic acid 1 (C ₅ H ₇ NO ₂) Froentjes, 1943 (fig.) w.l. (in Å) rotation (in degrees) 1% 2% 10% 40%	(x+1) 0 230 8.8 722 3.3 375 9.1 776 3.6 400 9.5 793 5 481 10.1 832 5.7 530 11 950 5.9 545 11.5 1015 6.6 571 11.7 1032 7.2 595 12.9 1245 7.6 644 14.5 1400
6800 -10.5 -10.0 -9.0 -8.0 6500 -11.0 -10.5 -10.0 -9.0 6000 -12.5 -11.5 -10.0 -9.0 5500 -13.5 -12.5 -10.5 -9.5 5000 -14.0 -10.5 -8.5 -6.0	Le Chatelier, 1884
	t p dissoc. t p dissoc.
Water + Methylboric acid ($ ext{CH}_{ extsf{g}} extbf{0}_{ extsf{g}} ext{B}$) Burg, 1940	9 746 -2 230 8 700 -3 210 3 420 -4 205 1 340 -5 146 0 320 -6 153
Dissociation in the gaseous state	t p t p
	-1 290 - 7 230 -3.5 262 -14 175
	Roozeboom, 1884
	t p dissoc. t p dissoc.
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

×	t	p	Water +	Hydrof lu	oric acid	(HF)		į
0.505 0.611 0.709	3 6	249 355 496 701	Brosheer	, Lenfes	ty and Elm	ore, 194	1 7	
$\substack{0.900\\1.10}$		105 (sic.)	×	p ₁	p ₂	%	p ₁	p ₂
% t	*	t		25°			40°	
1.44 0 1.23 3 1.07 6	760 mm 0.95 0.87	12	0.00 2.00 3.96 6.02 9.86 12.80 14.60 16.80	23.77 23.46 22.88 22.30 21.12 20.59 19.67 18.87 17.88	0.048 .087 .131 .256 .380 .452 .595	0.00 2.00 4.21 6.10 10.38 12.33 14.00 16.80 21.00	54.81 54.06 52.53 52.04 49.04 47.42 46.60 43.91 40.07	0.115 .231 .343 .651 .830 1.070 1.410 2.110
Water + Bromine (E			24,90 29,00	15.40 13.52	1.280 1.900	24.12 28.90	37.27 32.00	2.950 4.560
Rhodes and Bascom,		<u> </u>	2.00	60°			75°	
0.200 39.48 0.400 59.70 0.695 72.10 1.020 81.50 1.380 88.35 1.590 92.10	L at b.t. 1.940 2.10 2.16 2.29 2.85 3.14	91.10 93.20 92.85 96.00 97.60 97.70	0.00 2.23 4.12 6.15 9.06 12.00 15.00 17.90 20.90 23.90 26.50 29.50	149.8 146.6 144.6 140.9 135.7 127.8 123.5 116.6 109.2 102.2 95.2 86.2	0.366 0.670 1.030 1.710 2.420 3.390 4.650 6.140 8.180 10.570 13.350	26.70	286.9 282.4 275.9 269.8 260.1 252.3 237.9 228.9 209.7 199.6 183.1 167.6	0.659 1.390 2.140 3.420 4.940 7.200 9.120 12.450 16.520 21.460 27.550
sat.t.	, <u>%</u>	sat.t.	=======	و می دند سے حدر سید حد سے اس	سے میںنے لیے آپ کی کی کے میں میں دیے۔ عید لیے کی کے ان کے ان کے ان کی ان ان ان ان ان ان ان ان ان ان ان ان ان	امار دست است است است دست دست است است امار دست است است است است است است		
3.341 30.1 3.357 36.0 3.387 41.0 3.414 44.8	3.447 3.496 3.500	48.8 52.8 53.6 (b.t.)	Munter,	, Aepli a	ind Kossatz	z, 1949		
			%	p	p ₁	p ₂		
Giran, 1914					0.1°			
% f.t.	m.t.		70	40.8 42.1	0.0 0.0 20.0°	40 42		
$\begin{array}{cccc} 0 & 0 & 0 \\ 3 & -0.3 \\ 3.5 & +7.5 \\ 52.5 & +7.5 \\ 99.95 & +7.5 \\ 100 & -7.5 \end{array}$	-0.3 E -0.3 E -0.3 and -7.5	-7.5 (8+1)	70	116 119	0.1 0.2 30.0°	116. 118.	4	
Water + Nitrogen (Vargaftig and Timro Vapour phase			10 20 30 50 70	28.1 28.3 23.8 24.0 19.9 20.2 25.8 26.7 193 197 189	27.9 28.0 23.0 23.2 17.8 17.8 5.32 5.28 0.27 0.28	189	28 79 79 34 41 50	
ll 75 69	65° 25 1.5 0 1.5 0 1.5 0	57 49.5	20 30 50	70.2 70.6 58.9 58.8 74.9 76.4	67.3 68.0 51.2 50.9 16.7	2. 2.	90 64 70 92 20 00	

		60.0°	
10	133 135	131 133	$\frac{1.60}{1.65}$
		70.0°	
10	209	206	2.72
20	212 190 189	209 182 181	2.60 7.63 7.98
30	156	133	22.80
50	152 186 191	130 47.9 48.7	22.20 138 142

Fredenhagen and Wellmann, 1932

mo1 %	b.t.	mol %	b.t.
0.18	100.053	28.50	114.85
0.448	100.147	33.00	115.18
0.899	100.257	40.60	113.21
$0.987 \\ 1.345$	100.262 100.298	53.45 56.30	63. 7 5 55. 70
1.790	100.464	5 8 .90	50.44
2.690	100.743	63.10	43.50
2.920	100.764	97.26	23.220
3.300 5.230	100.925 101.496	97.60	22 849
8.750	102.516	98.33 98.79	21 648 21 086
11.470	103.754	99.28	20.516
13.70	105.216	99.75	19 955
17.10	108.80	99.88	19.779
20.70 25.15	111.56 113.83	100.00	19 540

Fredenhagen and Kerck, 1944

mol%	b.t.	mo1%	b.t.
0	100.00	79.55	44.50
6.98	101.45	82.07	46.05
11.52	102.83	89.28	32,12 28,30
19.70	106.05	89.87	29.50
23.32	107.55	$\frac{91.38}{91.80}$	28,95
24.46	$108.60 \\ 108.80$	92.06	27.92
26.63	110.93	93.04	26.89
30.62	111.35	94.03	25,90
33.26 40.48	111.10	95.02	24.89
43.08	109,90	96.01	23.88
48.19	105.00	97.00	22.87
52.66	100.60	98.00	21.86
55.78	85.50	98.50	21.14
58.86	79.20	99.00	20.81
61.51	86.50	99.20	20.58
66.09	74.60	99.40 99.64	$\frac{20.35}{20.10}$
66.99	68.50	99.82	19.84
70.39	62.30	99.91	19.70
73.48	58.50	100.00	19,54

Munter,	Aepli a	nd Kossatz	z, 1947		
9	6	b.t.		%	b.t.
L	v		L	V	
5.47 10.1 20.6 24.7 30.1 36.2 36.8 37.6 38.22 38.27 39.2 42.2 38.26%	0.87 2.03 7.06 11.60 19.40 32.80 34.40 36.4 38.15 38.26 41.10 50.1 b.t.=	101.6 102.8 106.8 108.4 110.3 111.7 112.0 112.1 112.3 112.4 112.1 111.4	47.0 49.2 52.9 54.8 58.6 60.7 64.1 66.2 72.0 81.4 89.0	65.7 82.6 87.4 92.9 97.3 99.0 98.7 98.8 99.3	108.7 106.8 101.7 98.9 90.9 86.6 79.0 74.6 61.6 45.1 33.5

Deussen, 1906

43.2 % b.t. = 111/750 mm Az $d^{18} = 1.138$

Lecat, 1949

% ob.t.

38.26 112.0 Az
100 19.4

Muchlberger, 1928

Az : 38.18 % (735 mm) b.t. = $110.8^{\circ}/732$ mm $d^{2 \circ}$ = 1.1038

Cady and Hildebrand, 1930

mo1%	f.t.	mol%	f.t.	
0.777 5.64 8.09 15.65 21.6 26.5 27.6 30.7 32.1 37.1 40.3 47.8 51.5 57.5 62.7 68.5	-1.06 -6.46 -10.0 -23.0 -41.6 -60.2 -70.3 E -62.9 -59.6 -49.1 -43.7 -36.3 -36.3 -36.0 -41.7 -51.0 -68.3 -75.3	69.8 71.0 74.3 76.2 77.6 78.6 79.6 81.7 86.4 91.3 93.9 96.1 97.4 98.2 100.0	-75.6 -75.9 -81.9 -91.3 -101.5 -100.5 -100.5 -105.6 -111.0 -107.1 -99.9 -93.8 -87.1 -85.6 -83.1	
(1+1)	(1+2)		(1+4)	

Hart, 1890	j	Hill and S	Sirkar, 1910		
% d %	d	K	đ	%	d
15° 0 1.00 46.40 2.90 .01 49.30 5.80 .02 52.20 8.70 .03 55.10 11.60 .04 58.00 14.50 .05 60.90	1.16 .17 .18 .19 .20	0.484 1.504 2.48 4.80 7.75 15.85 24.47	0° 1.005 .009 .012 .017 .035 .065	71.73 72.21 78.05 84.27 87.72 88.11 88.82	1.262 .260 .260 .235 .212 .210
17.40 .06 63.80 20.30 .07 66.70 23.20 .08 69.60 26.10 .09 72.50 29.00 .10 31.90 .11 14.8 34.80 .12 29.3 37.70 .13 43.8 40.60 .14 58.3 43.50 .15 72.8	.22 .23 .24 .25 1.05 (second .10 series) .15 .20 .25	28.48 29.83 34.23 38.50 41.00 41.15 41.92 47.52 48.49 50.97 55.09 55.39 57.66 61.66	.110 .120 .130 .145 .155 .157 .187 .182 .187 .200 .217 .220 .230	89.02 89.15 89.82 90.20 90.64 91.04 92.09 92.81 92.91 94.26 97.50 98.22 100.05	.202 .200 .190 .185 .175 .165 .152 .130 .095 .065 .035 .022
Winteler, 1902		65.19	.255 18		.0005
% d %	d	0.484 1.504 2.48 4.80	1.003 .005 .009 .017	7.75 15.85 24.47	1.028 .058 .087
0 0.998 26 1 1.001 27 2 .005 28 3 .009 29 4 .012 30 5 .016 31 6 .021 32 7 .025 33 8 .028 34 9 .033 35 10 .036 36 11 .039 37 12 .043 38 13 .047 39 14 .050 40 15 .053 41 16 .057 42 17 .060 43 18 .064 44	1.090 .093 .095 .099 .102 .104 .107 .110 .112 .115 .118 .120 .123 .125 .128 .131 .134 .136 .139	Domange,		29.83 d 1.134 .149 .1595 .179 .183 .205	.103
19 .067 45 20 .070 46 21 .074 47 22 .077 48 23 .080 49 24 .084 50 25 .087	.144 .147 .150 .152 .155	Zecchini,	1905 t n _D		
Zecchini, 1905		0 19.0580 35.6720	15 1.33 13 .32 14 .30	220	م
zecchini, 1905 % t d			۔ سی علیہ آمین امیر میں میں سے سے میں میں میں میں استحد امیر است	art auth ann nige gair dan dan ann agus gair agus	الله الله الله الله الله الله الله الله
0 15 0,99940 19.0580 13 1,08725 35.6720 14 1,15222					

					<u> </u>						
Hill and	d Sirka:	r, 1910				Water + F	lydroch1	oric acid	(HC1)		
#	ж 		н	%							
		0°			18°	Heteroger	neous equ	lilibria.			
0.484 1.504 2.48	55.1 159.2 257.1	72.21 78.05 84.27	6739.2	0.0037 .0075 .0151	ა. გ	Roscoë ar	nd Dittma	r, 1860			
4.80	483.6	87.72	5749.0	.0302	8.0	%	p	%	р		
7,75 15,58 24,47	793.6 1601.3 2515.7	88.82 89.02	5387.8	. 1210 . 2420	21.0			0°			
28.48 29.83 34.23 38.50 41.00	2894.3 3060.1 3537.9 3909.8 4195.6 4212.2	89.15 89.82 90.20 90.64	4871.5 4317.3 3324.7 2819 1	1,5040 2,48 4,80	67.3	38.04 42.73 44.32 45.17 45.08	158 321 569 735 737	45.26 45.98 45.98 47.09 47.01	932 937 1263		
41.15 41.92 47.52 48.49	4223.1 4881.3	92.81 94.26	2396.7 2357.5 2107.7 1513.2	7.75 15.85 24.47 29.83	2831.5 3411.4		t	p	%	t	р
50.97 55.09 55.39 57.66 61.66 65.19 71.73	5001.9 5297.0 5791.8 5820.3 6053.4 6299.7 6501.8 6782.5	97.50 98.22 100.05	1069.3 887.2			36.25 35.98 38.54 38.23 39.65 39.43 41.08	59.2 59.2 43.5 43.5 35.4 35.3 24.5 24.4	766 766 756 767 758 753 757	41.08 42.56 42.46 44.19 44.13 44.47 44.41	24.2 16.0 16.0 7.2 7.2 4.8 4.7	750 753 739 754 754 762 760
						Az (maxi					
Thorvald	son and	Bailey,	1946			%	p	%	p		
%	m	U	%	m	U	18.1	2510	21.2	490		
1.086 1.459 2.173	0.277 0.549 0.740 1.110 2.775	0.9956 .9919 .9882 .9824	14.96 8 19.97 12 25.10 16	.791 470	9.9258 .8917 .8603 .8294 .7734 .7185	18.2 18.5 19.6 20.0 20.21 20.23 20.6	2460 1770 1100 960 768 765 630	21.7 21.8 22.2 22.9 22.9 23.3	380 300 210 100 65 64		
:======						D-11-	1. 1000				
						Dolezale		N	n.		
Guntz,						N	p ₂		P ₂		
7.6 13.3 30.8 37.5 66.7 100	mo1%	inal 17°	Q dil. very small +100 450 720 2050 4560			4.98 5.00 5.50 6.00 6.43 6.50 7.00 7.58 7.58 8.00 8.04 8.50	3 0. 24 . 245 . 37 . 52 . 69 . 71 . 96 1. 33 1. 41 3. 34 4. 10 4. 44 7. 75	9.00 9.21 9.50 10.00 10.24 10.50 11.20 11.62 12.00 12.14 12.25	12.7 15.5 31.5 45.5 66.0 112.0 134.0 170.0 277.0 313.0	4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

			***.			1				
A 1lan	, 1898					Foulk and	Hollingswort	th, 1923		
Z	p	%	p	%	p	%	p	%		p
36.40 35.90 35.10	138.1 109.8 75.8	34.85 33.90 32.85	.4° 66.6 46.0 32.7	31.7 30.2 28.1	0 11.8	20.197 20.221 20.245	770 760 750	Az 20.25 20.29		740 730
Bates	and Kirsc	hman, 1919								
m	pа	m	p ₂	m	p ₂	<u> </u>	d Tittus, 193			
3.240 3.952 5.041 5.364	0.00780 .01724 .0557 .0791	25 6.018 6.270 6.457 7.148	0.1487 .1727 .206 .385	8.15 8.95 9.99	50 1.819	23.42 21.883 21.437	50 250 350	Az 20.50 20.15 19.73	5	640 800 1 000
i	0.148 0.712	8.726	°2.61	9,2	86 3.47	20.916	500	19.35		1220
Dobson	and Maso	n, 1924				Rayleigh	, 1902			
N		p ₁		2		11	% V	%		
0 2.0	0 65 3.	25° 23.7 7 21.5 1 19.6	vers	y low		LL	v b.t.		V	
		1 19.6 4 17.3 0 13.4 7 10.5 6 6.3		013 7 1030 5 7 0		6.45 7.50 8.95 11.00 14.50 18.0		20.3 23.3 25.2 27.4 29.0 32.8	18.9 32.4 44.2 56.6 68.8 88.3	
Dunn a	and Rideal	1, 1924				18.0	12.60		======	ا الله الكوانية بالله أنها الكوانية الكوانية الكوانية الله الكوانية الله الله الكوانية الكوانية الكوانية
M	p ₂		2	M	p ₂	Wrewsky,	1023			
		25∘	***************************************			mol% (L)		o1% (V)		
4,20	.0255	1.72 0.00 1.57 .00	0926	0.46	0.0000121 .00000571	19.95° 55.2°				
3.37 2.4 2.12	.0105 .00312 .00235	1.11 .00	0829 0403 00236	0.361 0.345	.00000354	8 10 12 14	0.4 1.2 4.9 15.0	0.7 2.1 7.8		
Åkerlof	and Tear	e, 1937				16	40.6	22.2 47.4		
M			р 30°	40°	50°	Wrowalsi	nd France 1	1020		
3	4	8 15	27	46	79	miewski al	nd Faerman, 1	1929	9.	
4 5 6	4 3 3	8 15 7 14 7 13 6 12	25 23 21	43 40 37	74 69 64	L	V	L	γ.	v
7 8	3 2	5 11 5 10	19 18	34 32	59 56	10.01	^ ~	78°		
9 10	2	5 9 5 10	18 18	32 35	57 62	10.81 16.89 19.90	$\begin{array}{c} 0.7 \\ 4.2 \\ 11.35 \end{array}$	23.6 25.5 27.9	8 0 1	34.60 50.40 70.50
11 12 13	4	6 12 9 18	23 35	43 64	78 116	21,95	20.90	29,7	î	70.50 82.40
14	12 2 25 4	5 30 4 51 9 90 4 133	55 91 158 232	98 160 27 1 398	179 277 460 677	31.05 33.00 34. 8 5	88.7 94.35 97.0	21° 35.5 36.9 37.6	5	97.8 99.0
	عين شين التي مثل الكوائد شين التي مين التي التي شين شاء التي منذ التي التي التي									

<u></u>									75.	9°	
6.65 10.25 13.4 17.0 19.15 22.65 23.4 25.0 27.4 28.8	0.2 0.3 1.15 4.6 5.35 18.5 23.0 73.6 87.4	3.4 5.3 7.1 9.2 10.4 10.5 12.6 13.1 14.1 15.7 16.6	1%	83 75.5 72 63 59 58 53 52 54 72 86 134,5	42.5 30.0	.11 .70 1.36 1.56 5.3 6.7 11.5 42	9.03 14.73 14.73 19.84 21.53 21.53 22.40 22.46 24.60 25.75 25.75 28.54 28.58 30.67 30.67 32.80 33.35	0.47 2.16 2.31 11.29 19.05 18.66 23.41 23.45 27.53 41.51 41.40 53.03 53.22 70.10 75.80 86.84 86.10 91.40 92.90 92.50	5.11 7.06 7.06 10.88 11.94 11.94 12.50 12.77 13.05 14.63 14.63 14.63 14.63 17.94 17.94 19.42 19.82	0.23 1.08 1.15 5.90 10.40 10.22 13.13 13.15 15.75 25.97 25.91 36.81 35.99 61.18 60.70 76.92 75.34 84.08 86.63 85.84	264.3 0.6 236.0 2.5
30.7 33.0 35.9	97.5 99.0	17.9 19.5 21.6	95.0 97.6	246 5 7 3	17.5 12.5 13.7	234 559	Berl	and Standin	ger, 1930	1	
======					. مده دی صدر سر سر دید د. د در دید سر سر سر سر سر د	======	L	% V	dew t	b.t.	р
Wrewsk	i, Sawaı	ritzky ar	d Scharl	off, 19	24		1.450	0.0027	100.3	102.5	746.8 746.4
L	% V	mo L	-	p	D.	Do	4.145 5.735	0.0027 .058 .086 .174 .269	101.1 101.3 101.9 102.5	102.2 104.0 103.2 103.5	742.0 741.4 740.5
0.00 5.05 5.05 10.00 16.03 18.05 20.9 24.1 24.98 30.05 31.05 31.05 32.97 32.97 36.89 38.89	0.00 .00 .00 .00 .00 1.14 2.15 1.03 6.28 8.28 28.99 81.46 81.46 94.3 94.4 99.0	19	.95°	17,5 16.0 16.1 14.4 12.3 11.6 10.3 10.2 9.3 9.2 9.1 16.1 38.5	P1 0.0 0.0 0.0 1.1 1.1 3.3 1.1 5.5 11.0 34.2 142.4	P2 17.5 16.0 16.1 14.4 12.2 12.1 11.5 10.0 9.8.2 7.7 5.1 4.3 2.9	1, 450 2, 994 4, 145 5, 735 9, 200 10, 31 11, 40 14, 06 15, 17 16, 15 16, 76 17, 85 18, 24 18, 74 18, 74 18, 98 20, 17 20, 29 21, 25 21, 25 22, 26 22, 60 23, 05 24, 65 24, 82	2.91 4.57 6.29 7.85 10.05 11.69 13.75 15.64 19.20 20.20 23.10 24.50 26.28 31.34 31.00 32.22 31.85 36.48	103.2 104.2 104.8 106.4 107.8 108.6 108.8 109.2 109.3 109.7 109.9 109.9 109.9 109.6 108.9	104.8 105.2 108.0 109.2 109.8 109.5 110.7 111.5 110.8 111.3 113.2 110.4 109.8 110.5	742.4 745.6 744.7 757.3 750.5 748.2 745.5 742.4 740.8 742.4 742.4 748.5 750.2
% L	v	mo L		р	p ₂		25.33 25.98	49.28 53.80 53.80 55.95	105.4 104.2 103.2	108.0 105.2 105.0	753 7
5,03 10,00 10,00 16,00 18,05 18,05 23,15 23,86 24,98 26,53 28,95 28,95 30,05 30,05	0.00 .15 .15 1.7 1.7 3.9 22.74 28.04 38.17 51.76 73.94 74.30 82.80 82.70		5.2° 0.00 07 08 83 84 1.97 12.70 16.14 23.40 34.65 58.38 58.86 70.50	114.7 104.7 104.7 89.5 84.1 83.6 74.1 74.0 76.3 86.5 111.0 110.5 84.3	0.0 .1 .1 .8 1.7 1.6 9.4 11.9 17.8 30.0 64.8 65.1 102.5		26, 26 26, 70 27, 07 28, 34 28, 90 29, 93 30, 78 31, 06 32, 07 33, 16 34, 35 35, 03 35, 47 36, 01 37, 14 38, 40, 07	55.95 60.94 64.92 70.12 72.54 77.84 83.13 84.42 87.48 91.95 93.93 95.25 95.67 95.72 96.76 97.47 97.85	108.2 106.4 106.3 105.4 104.2 103.2 102.2 102.2 102.5 100.5	104.5 103.0 100.0 99.2 94.0 88.3 88.5 82.0 66.0 67.1 68.0 52.1	758,5 748.0 763.4 758.7

% b.t. p L V	Deicke, 1 8 63
60.09 100.10 -14 754.4 51.92 99.25 -36.5 749.2 49.84 99.20 -20 752.0 46.99 99.21 -12 748.5 45.10 98.27 -3 754.0 44.92 98.75 +1 747.7 44.06 98.75 +16.7 750.0 42.31 97.06 +17.2 754.4 41.50 97.92 +18 748.4	t absorpt. coeff. % 0 525.202 45.148 4 494.722 44.361 8 480.288 43.828 12 471.336 43.277 14 462.375 42.829 18 451.222 42.344 18.25 450.660 42.283 23 435.034 41.536 Absorp. coeff. = vol. gaz in 1 vol. solv.
Rupert, 1909	
% b.t. % b.t.	Almen, 1898
61,65 50 65,18 10	% a.10 ⁵
61.76	15° 0.16 81 9.16 85 20.97 89 30.55 91 39.11 93
Jablezynski and Kon, 1923	a = Dv/G , where G is the absorbed volume of NH ₃ gas
m b.t. m b.t.	
0.2892 100.278 1.5107 101.627 .5870 100.583 1.8453 102.046 .8926 100.908 2.1612 102.466 1,2269 101.287	Bonner and Wallace, 1930 % p b.t. % p b.t.
Bonne and Branting, 1926	19.358 1220 122.98 20.638 600 102.209 19.734 1000 116.185 20.777 540 99.653 20.155 800 110.007 20.916 500 97.578 20.222 760 108.584 21.075 450 95.029 20.268 740 107.859 21.235 400 92.080 20.360 700 106.424 21.365 370 90.237 20.413 680 105.564 21.883 250 81.205
%Az p b.t. %Az p b.t.	20.507 640 103.967 22.520 150 69.956 23.420 50 48.724
20.560 620 103.3 20.471 650 104.5 20.532 630 103.7 20.438 660 104.9 20.504 640 104.1 20.351 700 104.9	
	Robinson and Stokes, 1949 m osmotic coeff. m osmotic coeff.
Othmer, 1928	m osmotic coerr, m osmotic coerr.
% b.t. % b.t.	0.1 0.943 1.6 1.126
8.67 0.21 101.5 20.09 18.49 107.8 12.45 0.75 103.1 20.79 22.97 107.6 15.97 2.80 105.5 21.36 27.54 107.5 18.09 7.55 107.2 21.79 31.00 107.3	0.1 0.945 1.8 1.57 .2 945 1.8 1.57 .3 952 2.0 188 .4 963 2.5 .366 .5 974 3.0 348 .6 986 3.5 431 .7 998 4.0 517 .8 1.011 4.5 .598 .9 .025 5.0 .680 1.0 .039 5.5 .763 .2 .067 6.0 .845

Shidei, 1927	0.07890 gr HCl 9.673%
Vapour phase	100 241.368 400.0 110 241.392 410.2
	120 241.416 421.5 130 241.440 432.4
t molar volume p 0.09403 gr HCl 29.12%	150 241.489 454.3 0.15144 gr HC1 9.673%
100 239,628 428,0	110 240.674 785.5
110 239.652 440.9 120 239.675 452.0	120 240.698 807.6
130 239.699 464.6 150 239.747 488.4	130 240.722 829.6 150 240.771 872.8
0.16440 gr HC1 29.12%	0.15984 gr HCl 42.68%
110. 241.095 762.5	110 240,957 683.0 120 240,981 701.3
120 241.119 784.2 130 241.143 805.4	130 241,005 720,9 150 241,053 758,7
150 241.191 847.1	
0.11449 gr HC1 40.05%	
100 240.520 485.3 110 240.544 498.9	Freezing curve .
120 240.568 512.6 130 240.592 526.2	- Incoming curve
150 240.640 553.4 0.18407 gr HC1 40.40%	
110 240,091 799.9	Rüdorff, 1862
120 240,115 822,2	% f.t.
150 240.187 888.7	1.74 - 1.9
0.15960 gr HCl 29.967%	3.37 - 4.0 4.06 - 4.75
110 240.832 737.8 120 240.856 758.4	5.04 - 6.50
130 240.880 778.9 150 240.928 819.5	5.56 - 7.05 6.77 - 9.60 8.42 - 13.05
0.11324 gr HC1 29.882%	
100 240.519 511.5	
110 240.543 526.1 120 240.567 540.4	Guthrie, 1876
130 240.591 554.8 150 240.639 583.1	
0.09858 gr HC1 9.606%	· · · · · · · · · · · · · · · · · · ·
100 239.993 500.4 110 240.017 514.8	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
120 240,041 528.9	4 -5.3 10 -20.5 5 -7.0 12 -27.0
130 240.065 542.8 150 240.113 570.6	6 -9.0 14 -35.0
0.15160 gr HCl 20.34%	16 -45.0
110 240.755 741.3 120 240.779 762.3	
130 240,803 782,6	
150 204.851 823.6 0.10679 gr HCl 20.34%	
100 239,989 510,6	
110 240,014 525.5 1 120 240,038 539 9	
130 240.062 554.2 150 240.110 582.6	
0.18750 gr HCl 44,236%	
110 240.273 794.0 120 240.297 816.2	
120 240, 297 816, 2 130 240, 321 838, 3 150 240, 369 881, 8	
210,007 001,0	

Pickering, 1893			Jones, 19	04; Jones	and Bas	sett, 1905	
% f.t.	% f.t		M	f.t.	M 	f.t.	
1 St seri 48.81 (2+1) -17.50 47.53 -18.00 46.39 -19.75 45.21 -22.45 43.93 -26.25 42.49 (3+1) -25.65 41.41 -24.85 39.17 -25.40	21.46 -58. 20.48 -52. 19.49 -46. 18.56 -41. 17.36 -36. 16.18 -32. 14.97 -27. 13.75 -23. 12.46 -19.	5 6 1 75 65 20 6 5 5 10	0.05 .10 .20 .30 .40 .50 .60	-0.174 -0.355 -0.712 -1.080 -1.442 -1.832 -2.250 -2.634	0.8 0.9 1.0 2.0 3.0 4.0 5.0 6.0	-3.070 -3.540 -4.100 -9.937 -18.100 -30.5 -44.0 -61.0	=======================================
37.97 -26.95 36.68 -29.30 35.33 -32.45 33.74 -37.05 31.99 -42.00 31.87 -44.25 31.24 -46.20 28.19 -63.50 23.89 -79.50 22.81 -66.50 2nd seri	10.04 -13. 8.95 -11. 7.90 - 9. 6.89 - 8. 5.91 - 6. 4.82 - 4. 3.32 - 3. 2.07 - 1. 1.20 - 1.	75 55 45 0 3 7 0 6 0		1906 f.t. -4.118 -18.06 -39.90			
22.84 -77.25 22.39 -73.55 21.87 -69.25 21.32 -67.05 20.69 -62.25 20.04 -57.95 19.41 -55.75 18.83 -50.75	14.17 -28. 13.29 -25. 12.32 -19. 11.27 -15. 10.29 -13. 9.37 -11. 8,41 -13. 7.43 - 9. 6.19 - 7. 5.23 - 5.	25 40 95 80	Baume and	Tykociner,	1914	mo1 %	f.t.
18.83 -50.75 18.16 -46.85 17.45 -43.45 16.72 -40.05 15.89 -35.60 15.04 -32.15	9.37 -11. 8,41 -13. 7.43 -9. 6.19 - 7. 5.23 - 5. 3.81 - 4. 2.37 - 2.	75 60 95 00 25	25.6 28.2 33.4		0	40.1 47.6	-22.9 -15.8
Roloff, 1895			Kogan and	Nikolaev,		fig.)	
% f.t. %	f. t.			f.t.	%	f.t.	
0 0 10.01 1.40 -1.431 10.81 1.66 -1.706 11.30 2.66 -2.910 11.98	-14.97 -17.14 -18.50 -20.25 -22.34	1	0 10 20 25,21 30 40	0 -13 -50 -70.5 E -52 -23 (3+1)	43 50 58 65 98	-25 E -18 (2 -21 E -17 (1 -18 L ₁	+1) +1) +L ₂ +(1+1)
4.43 -5.184 12.90 5.39 -6.57 13.21 5.99 -7.64 13.31 7.16 -9.55 13.98 7.44 -10.11 14.14 8.76 -12.68 14.52 9.50 -14.10	-23,05 -23,98 -24,31 -26,62 -27,34 -28,84		Vuillard,	1955 (fig	.)	E	
Jones and Getman, 1902, 19 M f.t. 1.0 -4.122 1.5 -6.630 2.0 -9.939 2.5 -13.485 3.0 -18.096	03 and 1904		0 2 6 10 16 20 23 25 25 26,6 30 33 36	0 -2 -7 -16 -36 -59 -74.7 -70.0 -70.0 -73.0 -51 -39 -29	(6+1)	-74.7	

Properties of phases	Marignac, 1871
Density	t d 13.8mo1% 7.40mo1% 3.85mo1% 2mo1%
Ure, 1818	0 1.13040 1.07367 1.03946 1.02065 6.99 .12687 .07151 .03823 .02002 13.74 .12346 .06924 .03668 .01892
% d % d	6.99 .12687 .07151 .03823 .02002 13.74 .12346 .06924 .03668 .01892 16.68 .12198 .06820 .03592 .01831 21.41 .11961 .06648 .03457 .01720 26.43 .11707 .06456 .03299 .01579 29.64 .11544 .06331 .03192 .01481 33.36 .11355 .06176 .03059 .01356
15.5° 0 0.998 21 1.103	26.43 11707 .06456 .03299 .01579 29.64 .11544 .06331 .03192 .01481 33.36 .11355 .06176 .03059 .01356
1 1.004 22 .108 2 .009 23 .113 3 .014 24 .118	t d t d
4 .019 25 .123 5 .024 26 .127 6 .029 27 .132 7 .033 28 .137	lmo1% 0.5mo1%
8 .038 29 .142 9 .043 30 146	0 1.01056 0 1.00530 3.13 .01051 5.18 .00530 4.55 .01046 8.85 .00507 6.50 .01030 12.12 .00469
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	H 10 94 00981 15 90 00412
13 .063 34 .168 14 .068 35 .173 15 .073 36 .178	17.18 .00874 20.46 .00322 23.00 .00740 24.77 .00219 28.92 .00575 29.05 .00100 30.88 .00511 32.08 .00006
16 .078 37 .182 17 .083 38 .187 18 .088 39 .192	
19 .093 40 .196 20 .097 41 .202	Kolb, 1872
	% d % d 0° 15° 0° 15°
Kremers, 1859	ه الواقع الكافئ الأراب شور شور أن أن أن مور مورات أن مورات الدين فورات الدين فورات الأربيات المراب المراب الدين الواقع الكافر موات المراب الدين الواقع الكافر موات المراب الدين الواقع الكافر المراب ا
% d % d	2.22 1.0116 1.0103 29.72 1.1569 1.1504 3.80 .0202 .0189 31.50 .1666 .1588 6.26 .0335 .0310 34.24 .1806 .1730 11.02 .0581 .0557 36.63 .1931 .1844
0 0.998 17 1.083 1 1.003 18 .088	15, 20
2 .008 19 .093 3 .013 20 .098 4 .018 21 .103	23.72 1258 1196 43.09 .2216 .2124 25.96 1370 .1308 satd.
7 .032 .032 .0119	
8 .037 25 .124 9 .042 26 .129 10 .046 27 .134	Berthelot,1873
12 .057 29 .144 13 .063 30 149	mol% t d mol% t d
14 .068 31 .155 15 .073 32 .161 16 .078 33 .167 34 .177	1.95 13 1.020 20.04 17 1.171 2.04 13 .0205 21.92 17 .183 4.28 14.5 .042 22.47 17 .190
	0.29 14 .063 23.80 13 .196 8.66 13.5 .082 25.45 13 .203
t d 0 1.0429 1.0752 1.1077 1.1415 1.1171	12.99 17 .116 26.70 13 .215 16.47 17 .144
19.5 1.0383 1.0686 1.0991 1.1311 1.1588	
40 1.0309 1.0604 1.0882 1.1200 1.1466 60 1.0220 1.0511 1.0774 1.1093 1.1348 80 1.0116 1.0407 1.0695 1.0982 -	
100 0.9998 1.0295 1.0579 1.0862 -	

Hager, 1876	Le Blanc, 1889
% d % d	% d
16°	20°
0 0.9990 25 1.1222 5 1.0234 30 .1476 10 .0477 35 .1527 15 .0722 40 .1957 20 .0971	0 0.99823 7,45 1.03465 24,36 1.12837
Kohlrausch, 1876	Lunge and Marchlewski, 1891
% d % d	% d τ.10 ⁵
15°	15°
0 0.9991 29.48 1.1497 4.74 1.0229 29.54 .1500 9.81 .0481 39.03 .1964 19.50 .0975	0 0.9991 - 1.52 1.0069 15 2.93 .0140 17 5.18 .0251 20 7.84 .0384 24 9.99 .0491 27 12.38 .0609 32 15.84 .0784 33 17.31 .0860 35
Grotrian, 1877	17.31 .0860 35 18.36 .0914 37 20.29 .1014 42 22.89 .1150 44 25.18 .1271 46
% t d t d t d	1 27.75 .1405 53
3.99 8.20 1.0202 20.90 1.0176 27.66 1.0156 8.79 9.14 .0434 20.39 .0410 27.78 .0385 17.95 10.12 .0904 20.10 .0862 29.76 .0819 29.95 10.52 .1527 19.42 .1478 32.05 .1403	29, 35
Fink, 1885	Pickering, 1893
A d	% d % d
18°	15°
0.98 1.0040 5.02 .0241 10.34 .0506 18.16 .0904 25.34 .1279	0 0,99913 37.596 1.18583 6.382 1.03054 39.831 .19598 14.788 1.07158 41.212 .20099 19.688 1.09578 41.901 .20325 25.260 1.12381 43.136 .20970 34.464 1.17035 44.345 .21373
Perkin, 1889	
% d 4° 10° 15° 25°	
0 - 0.9997 0.9991 0.9971 15.63 - 1.0762 1.0713 25.60 - 1278 1227 30.86 - 1572 1514 36.50 1.1939 - 1856 1792 41.70 1.2154 1.2110 .2071 -	

Schung	ke, 1894				
t		d		* **	Schönrock, 1895
	31.61%	26.25% 	20.20%	15.47%	% t d
-6 -5	1.1707 1700	1.1399 .1394	1.1099 .1094	1.0842 .0839	11.453 20.4 1.0541 25.055 18.4 1.1242
-4 -3	. 1694 . 1687	.1389 .1384	$.1090 \\ .1086$.0837 .0834	25.055 18.4 1.1242
-2 -1 0	.1681	.1379 .1374	.1082 .1078	.0831 .0828	
+1	.1668 .1662 .1656	.1369 .1364 .1359	. 1074 . 1070 . 1066	.0825 .0822	Le Blanc and Rohland, 1896
3 4	. 1650 . 1644	.1355 .1350	. 1063 . 1059	.0819 .0816 .0813	% d
+1 2 3 4 5 6 7 8	. 1638 . 1632	.1345 .1340	. 1055 . 1051	.0809 .0806	20°
8	.1626 .1621 .1615	.1335 .1330 .1325	.1047 .1043 .1040	.0803 .0 7 99	0 0.9982 7.74 1.0361
10 11	. 1610 . 1604	.1320	. 1036 . 1032	.0796 .0793 .0789	15.00 .0718 28.23 .1393
12 13	, 1598 , 1593	.1311 .1306	. 1028 . 1024	.0786 .0783	
14 15	. 1587 . 1581	.1301 .1296 .1291	.1020 .1016 .1012	.0780 .0776	
16 17	. 1576 . 1570 . 1565	.1291 .1287 .1282 .1277	. 1009 . 1005	.0773 .0769 .0766	Sentis, 1897
18 19 20	. 1560 . 1553	.1277 .1272 .1269	.1001 .0997	.0762 .0759	mol% t d mol% t d
21 22 23 24 25 26	, 1548 , 1541	.1264	.0993 .0990 .0986	.0756 .0752	1 26.8 1.0057 5 13.15 1.0405 1 17.6 0079 10 24.9 .0677
23 24 25	. 1536 . 1530 . 1524	.1259 .1254	.0982	.0749 .0745	1 17.6 .0079 10 24.9 .0677 2 17.4 .0164 10 24.0 .0673 3 17.9 .0242 10 13.1 .0710
26	, 1520	.1250 .1245	.0974	.0742 .0739	
-6	12.58% 1.0683	6.94% 1.0368	$\frac{3.65\%}{1.0187}$		
-5 -4	.0680 .0678	.0367 .0366	-		Eckelt, 1898
-3 -2 -1	.0676 .0674	.0366	- -		% d % d
0	.0672 .0670 .0667	.0365 .0364 .0362	1.0190		room temperature 2.32 1.0069 49.42 1.1883
+1 2 3 4 5 6 7 8 9	.0665	.0361 $.0359$	-		4.04 .0139 51.57 .1981 5.76 .0211 53.72 .2080
4 5	.0660 .0657	.0358 .0356	-		9.20 .0356 58,02 .2285
6 7	.0654 .0651 .0649	.0355 .0353 .0352	1. <u>0</u> 187 -		10.92 .0431 60.17 .2390 12.48 .0506 62.32 .2497 14.04 .0583 64.47 .2605
9 10	.0646	.0350 .0349	-		15.59 .0661 66.61 .2716 17.15 0740 68.76 2828
11 12	.0640 .0638	.0347 .0345	-		18.86 .0820 70.91 .2943 21.64 .0901 73.06 .3059
13 14	.0635	.0344	-		24.42 .0983 75.21 .3177 27.20 .1067 77.36 .3298
15 16 17	.0629 .0626 .0622	.0340 .0338 .0335	1.0177		29.98 .1152 79.51 .3421 32.78 .1239 81.66 .3546 35.15 .1323 83.81 .3674
18 19	.0619 $.0616$.0333 $.0331$	-		37.53 .1415 85.96 .3804 39.91 .1506 88.10 .3937
20 21	.0613 $.0610$.0328 .0326	- -		42.29 .1598 90.24 .4072 44.67 .1691 92.39 .4211
22 23 24	.0606 .0603 .0600	$.0324 \\ .0321 \\ .0319$	-		47.04 .1786 94.54 .4350 96.69 .4493
25 26	.0597 .0594	.0317 .0315	1.0081		
		الله المعرفين الله الله الله الله الله الله الله الل			
					<u> </u>

, Cheneveau, 1907
8 d 8 d
15°
0 0,9991 22.87 1,1150 4,13 1,0200 26.17 ,1322 8,12 ,0398 29.39 ,1490 11,93 ,0587 32.54 ,1652 15,72 ,0777 33.58 ,1810 19,28 ,0962
Green, 1908
M d M d
24.9°
0 0.99714 5.981 1.0928 0.9955 1.0146 6.810 1.055 2.018 .0312 7.765 1183 3.032 .0476 8.918 1356 3.467 .0545 10.47 1570 4.587 .0716 11.97 1798 5.905 .0917
Guerdjikova, 1918
д <u>d</u>
25° 0 0.9971 14.319 1.0661 20.697 .0977 25.568 .1243
Tucker, 1915
mol% d mol% d
15° 17° 4.74 1.0448 3.91 1.0372 7.20 .0665 5.10 .0454 8.39 .0770 7.15 .0664 9.77 .0900 9.87 .0908 10.67 .0975 12.12 .1100 12.73 .1138 15.11 1336 14.01 .1252 16.83 .1472 15.61 .1375 18.57 .1588 17.25 .1505 19.03 .1635

Carstens, 1924	Schreiner, 1928
% d % d	M d M d
18°	18°
0 0,9986 20,25 1.0997 2.51 1.0111 28,71 .1438 5.38 .0252 30,55 .1550 8.86 .0427 36,85 .1851 15.19 .0762	0.501 1.00771 5.005 1.08179 0.9994 .01641 6.004 .09724 2.000 .03344 6.962 .11227 2.997 .04994 8.080 .12869 3.984 .06585 8.970 .14206 10.014 .15744
Manchot, Jahrstorfer and Zepter, 1924	Bonner and Tittus, 1930
c d	% d % d
25 °	25°
3.9387 1.0168 7.7318 .0335 16.703 .0741 23.706 .1050	23.420 1.1118 20.507 1.0973 21.883 .1042 20.155 .0955 21.437 .1019 19.734 .0933 20.916 .0993 19.358 .0915
Bonner and Branting, 1926	Bonner and Wallace, 1930
% d % d	% d % d
25° 20,351 1.0975 20.504 1.0983 20,438 .0981 20.532 .0984 20,471 .0982 20.560 .0986	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
% d % d	
20°	
0 0.9982 23.50 1.1142 3.757 1.0162 23.91 .1176 7.385 .0346 25.43 .1255 10.89 .0518 26.94 .1335 14.29 .0689 29.90 .1487 17.59 .0852 32.80 .1637 20.80 1016 35.53 .1768 21.43 .1048 39.14 .1935 22.37 .1092 40.61 .1998	Äkerlöf and Teare, 1938 0° 10° 20° 30° 40°
Huttig and Kukenthal, 1928	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

% d	Rupert, 1909
50° 60° 70° 80°	% t dsat.sol.% t satdsol.
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	61.65 50 1.212 65.18 10 1.240 61.76 45 .212 65.48 5 .245 62.27 40 .218 65.85 0 .247 62.90 35 .227 66.44 -5 .255 63.21 30 .229 66.71 -10 .260 64.19 20 .228 67.29 -50 .269 64.70 15 .231 67.65 -20 .279
22 .09172 .08660 .08151 .07648	% d -15° 0° +20° +35°
24 .00112 .00500 .00074 .08565 26 .11059 .10520 .00992 .09474 28 .11998 .11445 .10902 .10374 30 .13063 .12490 .11805 .11261 32 .13997 .13276 .12698 .12135 34 .14793 .14178 .13578 .12993 36 .15761 .15122 .14495 .13885 38 .16759 -	-15° 0° +20° +35° 46 0.011 0.011 0.012 0.014 50 .011 0.13 0.17 .020 54 .012 0.18 .025 .040 58 .017 .027 .048 .083 62 .027 .042 .082 .146 66 .040 .065 -
Guillaume, 1946	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
dd	59 ^m 1.266 1.211
	64 ⁵ - 1.221
5.42 1.0251 13.10 1.0634 34.00 1.1686	m - maximum of density s - sat sol
Deicke, 1863	Tammann and Schwarzkopf, 1928 t Dv.10 ² (%) t Dv.10 ² (%)
% t dsat.sol.% t dsat.sol	7,5% 10.9%
45.148 0 1.22556 42.829 14 1.20655 44.361 4 .22655 42.344 18 .20475 43.838 8 .21836 42.283 18.25 .20386 43.277 12 .21420 41.536 23 .19843	-1 -0.88 -4 -6.39 -2 1.69 -6 8.29 -3 2.42 -8 10.19 -4 3.17 -12 13.94 -7 4.94 -15 16.45 -8 5.39 -17 17.90 -9 5.78 -20 19.72 -10 6.08 -21 19.98 -12 6.15 -22 20.42 -15 5.70 -24 20.97 -16 5.38 -17 4.99
Roloff, 1895	-9 5.78 -20 19.72 -10 6.08 -21 19.98 -12 6.15 -22 20.42 -15 5.70 -24 20.97 -16 5.38
$\%$ t $^{ ext{d}}_{ ext{sat.sol.}}\%$ t $^{ ext{d}}_{ ext{sat.sol.}}$	-19 3.96
0	12.8% -5 -8.76 -5 -10.12 -10 14.59 -10 20.37 -14 18.90 -12 24.26 -15 20.46 -15 30.67 -16 21.43 -18 36.69 -17 22.42 -23 47.29 -18 23.82 -25 50.89 -20 26.03 -28 56.30 -22 28.19 -32 61.47 -24 30.08 -35 67.45 -27.5 32.61 -38 71.40

Schmidt, 1859	\	Viscosit	ty and su	rface tens	ion .	
% t	π				 -	
4.7 4.7 16.5	45.2	Grotria	n, 1877			
13.2 17.4 13.2 17 19.1 16	42.0 42.2 41.0	%	10°	ກ 20 °	30°	
26.7 15.0 32.7 15.5	39.3 37.9	3.99	1390	1059	858	
36.7 16.3 36.7 15.8	38.2 37.7	8.79 17.95 29.95	1461 1664 2172	1168 1333 1779	948 1129 1509	
	=				=======================================	
G						
Carstens, 1924 π % π		Wagner	, 1883			
18°		%	15°	η(water 25°	at 0°=100) 35°	45°
0 49.1 20.25 42.7 2.51 47.9 28.71 42.2 5.38 46.5 30.55 42.1		8.14				40.10
2.51 47.9 28.71 42.2 5.38 46.5 30.55 42.1 8.86 45.1 36.85 42.5 15.19 43.5	1 2	16.125 23.045	79.98 91.84	57.94 66.54 76.82	56.37 65.92	48.09 56.37
Mikhailov and Shutilov, 1956 (fig.)	Paglian	i and Bat	telli, 188	4	·
π		%	00	n 11.15°		
20° 40° 60°	80°	0 43.2	1775	1268		
0 45.5 43 42.5 4.9 43 41.3 41.1 10 41.2 40 40	42.2 40.9 39.9	43.2 45.0	3506 3834	2863		
18 39.1 38.8 38.5 27.0 38 38.2 38.7	39.4					
	=======================================					
		Howell	, 1927			
		%	η 	[%] 20°		
		0	1005	23.50	1482	
		3.757 7.385	7 1065 5 1125	23.91 25.43 26.94	1500 1555	
]	10.89 14.29 17.59	125 1 1323	26.94 29.90 32.80 35.53	1611 1731 1870	
		20.80 21.43 22.37	1408 1430	39,14	2004 2183	
		44.0/	1452	40.61	22 66	

Volkmann, 1882	Optical and electrical properties
d o	
2 0°	van der Willigen, 1869
0.9982 72.5 1.0242 72.4 .0625 72.1 .0887 71.7 .1190 70.9	34.21% 20.75° d=1.16623
	spectrum lines n spectrum lines n
	34.21% 20.75°
Sentis, 1897	A 1.40455 F 1.41774 a .40589 G .42092
mol% t σ mol% t σ	A 1.40455 F 1.41774 a .40589 G .42092 B .40704 G .42331 C .40817 H .42437 D .41109 H .42608
	B .40704 G .42331 C .40817 H .42437 D .41109 H .42608 E .41469 H .42816 b .41536
	Le Blanc, 1889
Whatmough, 1902	% n _D
8 0 8 0	20°
18° 0 74.16 14 73.49 2 74.64 16 73.25 4 74.43 18 73.05 6 74.19 20 72.92 8 74.66-4 22 72.70	0 1.33325 7.45 .35040 24.36 .39059
6 74.19 20 72.92 8 74. 66 6 22 72.70 10 73.83 25 72.33 12 73.67	Le Blanc and Rohland, 1896
	% n _D
Howell, 1927	20°
N(18°) \$ (20°) N(18°) \$ (20°)	0 1.3333 7.74 .3508 15.00 .3675 28.23 .3988
$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	20,20 .3700
2.096 7,385 72,30 6,812 22,37 71,15 3.144 10.89 72,10 7,126 23,30 71,07 3.668 12,63 72,00 7,336 23,91 70,92 4.192 14,29 71,91 7,860 25,43 70,70 4.716 15,97 71,80 8,384 26,94 70,40	Zecchini, 1905
5.240 17.59 71.67 9.432 29.90 69.62 5.764 19.20 71.52 10.480 32.80 68.71	% t n _D % t n _D
Zawidzki, 1900 L surface (foam)	0 20 1,33298 12,5590 25.9 1,36098 3.8331 25.5 .34149 12,5952 25.9 .36165 5.2764 23.8 .34462 17,0659 16 .37261 5.2733 23.1 .34509 23,0996 25.4 .38596 5.7234 24.4 .34587 26,6400 17.7 .39522 11,2915 25 .35840 34,4100 20.7 .41109 11,4358 16.6 .35937 36,2613 22.2 .41782 12,3551 25.4 .36088
20.03 20.19	

Chang	veau, 1907	,								· , , , , , , , , , , , , , , , , , , ,
%						Wagner, 19	20			
,	ⁿ D	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		n _D		c	$\mathbf{q}^{\mathbf{n}}$	С	^{n}D	
		15°					17.	5°		هي الطار الحدر الحدر الحدد الطار الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد الحدد
0 4.1 8.1 11.9 15.7 19.2	2 .3521	26.1 29.3	7 1. 7 . 9 . 4 . 8	3872 3954 4031 4103 4171		0 0.157 .316 .477 .638 .801 .966 1.133	1.33320 .33358 .33397 .33435 .33474 .33513	7.093 .265 .437 .609 .782 .955 8,128	1.34910 .34947 .34984 .35021 .35058 .35095	7 4 1 3 5
Guerd	jikowa, 19	018			The second secon	.300 .467 .634	.33590 .33628 .33667 .33705	.301 .474 .647 .820	.35169 .35205 .35242 .35279	?
K		n _D	%		n _D	.803 .972 2.141	.33743 .33781 .33820	.993 9.166	.35316	2
0 14.3	1.3	25 33255 3653	20.6 25.5	97 1. 68 1.	3801 3924	.310 .479 .649 .819 .989 3.159	.33858 .33896 .33934 .33972 .34010	.339 .513 .587 .861 10.035 .209 .383	.35388 .35425 .35461 .35497 .35538	5 [7]
Elsey	and Lynn,	1923				.329 .499 .669 .839	.34048 .34086 .34124 .34162 .34199	.383 .557 .737 .905 11.079	.35606 .35642 .35678 .35714	3 I
%	25°	30°	%	25°	ⁿ D 30°	4.009 .179 .521	.34237 .34275 .34313	.253 .427 .601	.35786 .35822 .35858	5 2 3
0.00 0.80 1.74 2.62 3.57 4.42 5.21 6.20	1,33251 .33432 .33651 .33847 .34060 .34255 .34433 .34662	1.33204 .33389 .33608 .33802 .34019 .34210 .34393 .34613	6.88 7.82 8.53 9.40 10.40 12.90 13.80	1.34816 .35025 .35190 .35374 .35590 .36187 .36395	1, 34769 .34977 .35144 .35325 .35534 .36130 .36336	.692 .863 5.034 .205 .376 .547 .718 .889 6.061 .233 .405	.34350 .34388 .34426 .34433 .34500 .34575 .34612 .34687 .34687	.775 .949 12.123 .297 .471 .645 .819 .993 13.167 .341 .515	.35894 .35930 .35930 .36902 .36038 .36074 .36109 .36145 .36181) 5 2 3 4 9
Howell.	, 1927					.577 .749 .921	.34798 .34836 .34873	.689 .863 14.037 .211 .385	.36287 .36323 .36359 .36394 .36429	3
%	n _C	n _D	n _F	n ₍	},			.559	.36464	
0 3.757 7.385 10.89	1.33117 .33938 .34786 .35594 .36357	1.33299		599 .34 464 .35 305 37	1944 58 2 4 5684	Huttig and		, 1928	-:	
14.29 17.59	.37135	.36603 .3738 7	.37 .37 .38	37 922 ,38	75 2 1 3339	7,	n _D		%	n _D
20.80 21.43 22.37 23.50 23.91 25.43 26.94 29.90 32.80 35.53 39.14 40.61	.37863 .38027 .38230 .38442 .38892 .38962 .39945 .40654 .41224 .41907 .42203	34173 35007 35815 36603 37387 38127 38304 38507 38713 38867 39238 40218 40950 41542 42232 42522	.38 .38 .39 .39 .39 .40 .40 .41 .42 .42 .43	850 .39 059 .39 281 .39 449 .39 830 .40 169 .40 851 .41 600 .42 209 .42	1121 3302 5517 5745 1903 3303 3306 4646 3350 1111 17743 4454	4.56195 8.9320 20.8450 24.8575	1.34354 1.35359 1.38072 1.39013	35	8.5506 5.3793 8.7576	1.39877 1.41374 1.42033
					, and the same and					

Schreiner, 1928	Perkin, 1889
M n	% t (α) _{magn.}
C D F	15.63 16 1.7117 25.60 20.4 .6583 30.86 21.5 .5562 36.50 11.0 .4657 41.70 17.3 .2766
2.997 35504 35722 36217 3.984 36243 36471 36994 5.005 36979 37218 37769 6.004 37687 37938 38497 6.962 38373 38634 39223 8.080 39114 39382 39996 8.970 39712 39989 40623 10.014 40396 40683 41339	Schönrock, 1895 % t (α) _{magn} . 11.453 20.4 2.3577 25.055 18.3 2.1748
	25,055 18.0 2.1/48
Washburn and Olsen, 1932	
N n _D N n _D N n _D	Guerdjikowa, 1918
20,00° 25,00° 30,00°	β (α) _{magn} .
0.0000 1,33302 0.0000 1,33251 0.0000 1,33196 .2430 .33507 .1216 .33351 .1214 .33299 .4859 .33708 .2428 .33457 .1994 .33366 .8901 .34040 .3041 .33506 .2425 .33403 1,2562 .34336 .4853 .33659 .2497 .33406 1,5215 .34549 .8549 .33956 .4440 .33566 2,0262 .34950 .8890 .33988 .6898 .33769 2,5129 .35332 1,2545 .34495 .8877 .33932 3,0401 .35738 1,5194 .34893 1,2525 .34227 3,4458 .36050 2,0233 .35269 1,5670 .34435 4,0582 .36514 2,5089 .35755 2,0200 .34833 3,4349 .36441 3,0298 .35310 3,4349 .36441 3,0298 .35610 4,0510 .34285 3,4337 .35918 3,0851 .3588 3,6	25° 0 5.068 14.319 6.101 20.697 6.660 25.568 7.117 In radians, gauss, centim. Guillaume, 1946 π *(α) mage 106
4.0435 .36334	π *(α) magn. 106
Karetnikov, 1954 (fig.) M specific refraction 18°	20° 0 - 3.974 5.42 1.3469 4.275 13.10 1.3638 5.625 34.00 1.4125 5.490 * in radians, gauss, centim.
0 0.206 2 .208 5 .211 6.2 .2125 8 .213	Forchheimer, 1900 % (α)magn. % (α)magn.
10 .2135 15 .215	20°
	1.90 2.342 12.94 2.346 4.05 .383 19.30 .248 5.65 .414 27.10 .207 7.17 .395

0kazaki, 1933	Grotrian, 1874
% Verdet's constant (3441 Å)	t x t x t x
28°	$d^{15} = 1.030$ $d^{15} = 1.0425$ $d^{15} = 1.089$
3.31 0.04676 7.78 .05134 13.89 .05683 20.38 .06317	8.02 2765 8.07 4260 7.31 6609 20.41 3404 23.61 5494 23.10 8445 32.34 4054 32.23 6190 32.33 9636
25.88 .06809 28.52 .07088	d ¹⁵ = 1.111 d ¹⁵ = 1.1395 d ¹⁵ = 1.151
Scott and Blair jr, 1933	9,15 7031 7.01 6437 10.11 6675 25,25 9014 9.05 6725 24.68 8110 33.15 9962 21.74 8081 33.09 9196 23.09 9461 32.84 9437
8 X 8 X	
29° 6.54 -0.712 18.20 -0.698 9.15 .710 18.53 .700 15.00 .704 18.66 .694 15.48 .702 19.28 .698 15.95 .702 19.81 .696	Kohlrausch, 1876
15.48 .702 19.28 .698 15.95 .702 19.81 .696 16.48 .700 20.19 .696 16.83 .700 26.45 .688 17.36 .701 27.27 .688 17.81 .699	18° 4.74 3767 159 9.81 6208 157 19.50 7602 155 29.48 6656 153 29.54 6651 - 39.03 5274 -
Mc Clung and Mc Intosh, 1902 d X - ray d X - ray absorp. absorp	Fink, 1885
Toom t. 1.000 53.0 1.079 86.9 1.026 73.4 1.112 89.9 1.049 80.8 1.160 94.2	Р х Р х 0° 18° 0° 18°
1.049 80.8 1.160 94.2	0.98 %
Ochs, Gueron and Magat, 1940	1 803 1078 300 845 1112 109 818 1089 400 856 1125 200 831 1101 500 868 1135
Raman spectrum.	5.02 % 1 3186 4545 300 3305 4688 109 3215 4596 400 3351 4737 200 3256 4648 500 3387 4778 10.34 %
Dolezalek, 1898	1 5200 7290 300 5400 7500 109 5270 7360 400 5460 7570 200 5330 7430 500 55200 7620 18.16 \$
N e N e 30° 4.98 1.190 11.00 1.008	1 6140 8690 300 6290 8890 109 6200 8760 400 6350 8960 200 6250 8830 500 6410 9020 25.34 \$
5,00 .189 11,20 1,005 5,50 .185 11,50 1,001 6,00 .160 11,62 0,999 6,43 .147 12,00 0,989 6,50 .145 12,14 0,981 12,25 0,974	1 5870 8190 300 5980 8340 109 5920 8250 400 6000 8390 200 5950 8300 500 6020 8430

Green, 1908	Jones, 1904 and Jones and Bassett, 1905
M λ M λ	Μ λ Μ λ
24.9° 0.9955 329.0 5.981 141.42 2.018 281.25 6.810 121.90 3.032 236.1 7.765 103.20 3.467 219.9 8.918 84.89 4.587 181.0 10.470 65.48 5.905 142.95 11.970 52.18	0° 0.05 234.0 0.8 200.5 0.1 228.5 0.9 196.0 0.2 218.0 1.0 191.0 0.3 217.0 2.0 166.6 0.4 214.0 3.0 141.1 0.5 209.5 4.0 120.2 0.6 208.0 5.0 100.2 0.7 204.0 6.0 83.05
Müller, 1912	Johnston, 1906
M κ relative M κ relative M κ relative	Μ λ Μ λ
18° 51° 81° 1.0 103.83 0.9883 155.03 0.9798 193.72 1.691 156.49 1.671 234.74 1.645 294.36 2.533 203.90 2.502 306.48 2.465 388.83 3.402 236.76 3.359 357.09 3.311 454.75 5.103 265.08 5.033 399.69 4.962 515.36 6.794 262.92 6.693 397.23 6.598 517.41	0.001 243.2 4 124.7 0.01 244.2 5 108.8 1 189.0 8 68.5 2 154.4 10 45.7
6.794 262.92 6.693 397.23 6.598 517.41	Tammann and Tofaute, 1929
	pKg 100 ($\lambda p - \lambda p = 1$)/ $\lambda p = 1$
Howell, 1927	0.1N 0.5N 1.0N 5.0N 8.0N 12.87
N(18°) N(20°) N(18°) N(20°)	19,18°
1.048 3196 7.126 7647 2.096 5375 7.336 7585 3.144 6760 7.860 7434 3.668 7190 8.384 7258 4.192 7508 9.432 6874	500 5.31 5.42 5.46 4.08 2.85 1.25 1000 9.35 10.08 10.12 7.82 5.17 .57 1500 13.75 13.92 13.93 10.77 7.47 .65 2000 16.71 16.85 16.89 13.12 9.42 .41 2500 19.40 19.67 19.73 15.22 10.61 0.76 3000 21.45 21.69 21.80 17.00 11.10 0.16
5.240 7823 11.48 6021 5.764 7854 12.26 5749 6.288 7799 12.83 5564 6.498 7771 13.38 5357 6.812 7728	Gelbstein, Shcheglova and Temkine, 1956
	m Acidity function (- lg ho) 20° 40° 60° 80°
Jones and Getman, 1902, 1903 and 1904	
M λ M λ 0° 1.0 200,32 2.5 152,38 1.5 182,35 3.0 141.87	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	6.0 -1.76 -1.83 -1.89 -1.96 6.5 -1.91 -1.97 -2.04 -2.00

Heat constants.	Berthelot, 1873
Thomson 1970	mol% Q dil. mol% Q dil
Thomsen, 1870 mo1%	initial final (by mole initial final (by mole HC1)
mo1% U	HC1) HC1)
0.5 0.978	0.90 0.45 50 21.28 0.83 3130 1.95 .66 175 21.92 .43 3170
1 .963 2 .931	2.04 .67 180 22.47 .45 3610 4.28 .58 420 23.80 .50 3770 6.29 .57 690 25.45 .50 3890
4.8 .854 9 .748	11 8.66 .40 1040 26.52 .52 4350
	12.99 .60 1670 26.70 .55 4390 16.47 .35 2290 28.57 .38 4470 20.04 .41 2865 30.67 .47 5150 31.54 .41 5310
Hammerl, 1879	31.54 .41 5316
% U _	
-12° - +12° 12° - 30°	Tucker, 1915
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	mol% Q dil. mol% Q dil. initial final 20° initial final 20°
6.53 - 8983 12.50 0.8076 8132 18.30 .7436 .7502	
1 23.82 .0868 .6895	4.74 2.37 18.54 12.73 12.20 289.2 7.20 4.74 52.8 14.01 12.73 353.8
28.18 .6602 -	8.39 7.20 100.4 15.61 14.01 439.3 19.77 8.39 128.3 17.25 15.61 527.5
32,37 .6270 -	10.67 9.77 186.2 19.03 17.25 635
	t Q dil. t Q dil.
Tucker, 1915	15.86mol% 18.19mol%
mol% U mol% U	+3.57 455.9 +2.12 510.5 20.00 498.7 9.61 551.6
10°	20.00 581.3
3.91 0.855 12.12 0.662 5.10 .815 15.11 .619	
3.91 0.855 12.12 0.662 5.10 .815 15.11 .619 7.15 .766 16.83 .599 9.87 .702 18.57 .588	Wrewski and Faerman, 1929
	% Q vap. % Q vap.
t U t U t U	L V cal/gr. L V cal/gr.
9.45mol% 12.96mol% 19.19mol%	10.81 0.7 554.3 31.05 88.7 361.4
-3.92 0.722 -4.03 0.657 -3.87 0.589 +5.89 .715 +1.30 .647 +11.94 .583 19.78 .718 16.25 .651 17.05 .585	1 16.89 4 2 558 2 33.00 94.35 327.0
[24.01 .732	21.95 20.90 531.7 35.57 97.8 294.7 23.68 34 60 505 5 36.95 99.0 278.2
28.07 .751	1 27.91 70.50 421.0
	29.71 82.40 377.8
Wrevsky and Kaigorodoff, 1924	
% U 3.3° 20.5° 40.4° 60.5°	Jäger, 1891
نتوان ہے جو ان میں میں میں میں ان میں ان میں نیوانی ایک میں میں ان ان میں میں ان ان ان میں ان ان ان ان ان ان ان ان ان ان ان ان ان	% heat conductivity coefficient
4.0 0.9282 0.9286 0.8425 - 10.2 8264 8348 .7765 0.8541 15.5 .7520 .7627 .7107 - 21.49 .6851 .6966 .6662 .7230 25.81 .6437 .6570 .6220 .6858 31.72 .5973 .6097 .6044 .6455	0 100
15.5 .7520 .7627 .7107 - 21.49 .6851 .6966 .6662 .7230 25.81 .6437 .6570 .6220 .6858	12.5
25. 81 .6437 .6570 .6220 .6858 31.72 .5973 .6097 .6044 .6455 37.70 .5665 .58256357	25 79.4 38 72.6
- 1000/	

							_	1010			
Water	+ Hydrobro	mic acid	(HBr)				schman,		n.		
Hetero	geneous ec	uilibria	•	•		F		m 	P2		
						51 0.0	25°	143	0 0232		
Ditte,	1877	عن الله على عند عبد الذي البياسي الد	الله الله الله الله الله الله الله الله	، شبه شهر حدر جدر سن سن شدر سنر ماندّ بسية لأنتر كان بيور سير سير	6.3 7.6	94 .(0032 0058	0.655 0.440	0.0232 .0466 .0888 .143		
t	p dis	s. t	p diss.		8.3 8.3	15 .0)115 10)134	950	, 143		
	(8+1)									
-6 0		30 41	287 335								
+11 14	191 20 9	41 54 62	404 440		Vrevs	kii, Sa	waritsky	and Sch	arloff,	1924	
	من جبر من میرسد نیز جر جر این بند معرجه من جر میرسونی شد	بواندو امرینیانیو میرانی میرانید در امرینیانیو دید این این این مرد	ہے جار کی انہو کی انہو کی دیو ہے کی د اب حوالات کی دیو انہو کی دیو کی دیو کی	ر المهاملين المدن المدن الميار الدار الميار الدين الميار بيان الميار الدين الميار الدين الميار الدين الميار ا و المهاملين المدن الميار الدين الميار الدين الميار الدين الميار الميار الميار الميار الميار الميار الميار المي		%	mo:		p	pε	P 1
					L	V	L	v			
Roozebo	om, 1885							9.93°	5 1	0.1	5,0
t	p diss.	 t	p diss.		47,83	10.44 28.70	16.94	19 32	9.1 2.1	0.1	3.5
	(2+)	1)	ب النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو النبو	و عند ستوحد و سن من حيث ميدن ميران حيات اس سن سن	55.00	50.19 85.10 94.72	19.60 21.38 22.73	55,62	4.9 8.1	2.8 6.5	2.2 1.6
-25	270 330 430	-11.3	520		30.00	77.12	5	4.83°		•••	
-20 -15	430	-3	690 7 60		10.30	0.00	2,40	0.00	109.6 109.7	0.00	109.6 109.7
					20.58	tt 11	5.45	tt 11	99.7 99.4	# #	99. 7 99.4
P	% sat.	p sol.	%		39,85	$\frac{1.38}{1.11}$	12,85	0,32 .25	58,6 57.4	0.2 0.1	58.4 57.3
-2			-20°		47.03 49.95	19.31 40.91	5.45 12.85 16.94 18.20	13.30 13.00	36.9 36.4	1.9 4.9 4.7	36.4 32.0 31.7
760	71,83	760	71.19		51.01	40.05 52.75 52.77	18,80	19,90	34.6 33.9	6.9	27.7 27.3
300 140	69.39 67.74	375 180	67.93		51.71	59 83	19.20	24.89 25.42	34.6 33.9 36.3 35.2	9.0 8.9	27.3 26.3
100 10 5	63.71 52.38	20	71.19 69.38 67.93 67.27 64.91		52.10 53.35	60.45 62.35 78.57	19.60 20.28	24 02		$9.6 \\ 18.1$	26.0 22.2
-1.	02,00		-11.30		54,61	78.97 84.55 89.57 96.48	21 12	45.52 54.90	40.3 39.5 51.6 53.3	$18.6 \\ 28.3 \\ 35.0$	21.5 28.3
760	70,50	760	79.35		55.00 57.17	89.57 96.48	21.38 22.85	65.63 85.93	104.0 103.3	89.4 89.2	18.3 14.6
470 250	69,37 67,93 67,27 66,45	570 310	79.35 69.36 67.92 67.26		58,50	98.13	23 . 87	92.14	-	-	14.1
175 102	67.27 66.45	216	67.26		60.17	98.09 93.15	25.17	96.30	272.0	260.7	11.3
i	5°		0°				7	9.90			
760 730	69,52 69,36 67,91 67,26	760 540	68.87 67.90 67.25 52.04		47.07	24.12 49.28	16.52 18.01	6.60 17.78 33.8 32.8 83.7 79.7 90.7 90.8 91.33	47.07	24.12 49.28	
430 298	67.26	380 50	52.04		52.00	69.6 68.7	19,40	33.8 32.8	52.00	69.6 68.7	
	و المراجع ميرون ميرون و						22.48	83.7 79.7	56,51	94.96 94.42	
%	b,t,	-	b.t.		59,10	94.42 97.8	24.33	90.7 90.8	59.20		
56.52 60.08	100 75	69.52 70.05	-5 -10		58.5	97.93	23.87	7		97.93	
63.17 65.88	50 25	70.50 71.19 71.83	-15 -20		"	97.66	"	90.26	1)	97.66	
67.77 68,87	10 0	71.83	-25	,	=====						
	ر المالي المورد	ب من من من المن المن المن المن المن المن	سین اسم الدی سیرشنی سیدالدی المیدالدی کی احتراط نیج الدی المیدالدی کنی سنگ الحدالات الدی الدی الدی الدی								
				ļ							

Carrière and Cerveau, 1923	Robinson and Stokes, 1949
%(L) b.t. %(L) b.t.	m osmotic coef. m osmotic coef.
15	25° 0.1 0.948 0.6 1.007 .2 .954 .7 .023 .3 .964 .8 .038 .4 .978 .9 .054 .5 .993 1.0 .072
%(V) b.t. %(V) b.t.	Pickering, 1893
0.03 100.5 57.5 124	% f.t. % f.t.
. 10 102 91 105 .40 104 95 90 .75 106,5 97 45 10.5 116 97,3 29,5 24,5 123 98.8 27.5 47.5 126 99 25 54,3 125,25	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Bonner, Bonner and Gurney, 1933 Az p b.t. % p b.t. %	13,749 9.3 30.216 41.8 15.882 11.7 31.583 46.3 16.280 11.6 32.864 47.9 17.993 14.5 33.243 53.3 19.387 15.6 34.692 59.4 19.940 17.5 35.677 58.4 21.712 20.7 35.755 64.8 21.963 19.4 38.394 -73.4 23.637 -24.1
100 74.12 49.80 700 122.00 47.74 200 90.35 49.28 800 125.79 47.56 300 99.91 48.83 900 129.13 47.40 400 107.00 48.47 1000 132.12 47.27 500 112.94 48.19 1100 134.80 47.14 600 117.82 47.95 1200 137.34 47.03	(4+1) 47.069 -66.5 52.066 -56.3 48.395 62.2 52.986 55.7 48.878 62.9 53.370 56.2 49.714 57.6 53.932 56.3 50.935 56.7 54.772 -56.8 51.290 -58.6 (3+1)
Ewing and Shadduck, 1925	55.414 -55.9 58.415 -48.4 55.699 54.6 58.816 50.4 56.550 51.8 59.517 47.9 57.180 53.8 60.500 -48.4 57.553 -49.8
Almèn, 1898 % a .105	60.346 -47.2 64.447 -21.9 61.691 38.3 65.375 27.4 62.149 46.9 65.759 16.2 63.069 28.8 67.396 11.9 63.786 -33.4 68.728 -11.2
1 0.00112 4 .00116 5 .00118 10 .00116 15-49 .00115	Jones, 1904; Jones and Bassett, 1905 M f.t. M f.t.
a = Dv/G, where G is the absorbed volume of gaseous HBr	0.1229 -0.451 1.229 -5.440 .1843 -0.657 1.843 -9.200 .2457 -0.880 2.457 -15.0 .3686 -1.350 3.072 -21.5 .4914 -1.845 3.686 -29.0 .6143 -2.316 4.300 -41.0

Properties of phases .	Kohlrausch, 1876
	\$ d
Topsoe, 1870	15°
% d % d	0 0,9991 5,25 1,0339
14°	10.52 10.52 15.66 1094
0 0.999 25 1.205 1 1.006 26 214	
1 1.006 26 .214 2 .013 27 .224 3 .020 28 .234	
0 0.999 25 1.205 2 .013 27 .214 3 .020 28 .234 4 .027 29 .245 5 .034 30 .256 6 .042 31 .267 7 .049 32 .278 8 .057 33 .278 9 .064 34 .30 10 .072 35 .313 11 .080 36 .315 11 .080 36 .325 13 .096 38 .37 .335 14 .105 39 .355 15 .113 40 .375 16 .121 41 .388 17 .130 42 .388 18 .139 43 .402 18 .139 43 .416 19 .148 44 .416 20 .157 45 .444	Biel, 1882
6 .042 30 .256 7 .049 31 .267 8 .057 33 .289 9 .064 34 .301	% d % d
8 .057 33 .289 9 .064 34 .301 10 .072 35 .313	150
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0.9991 26 1.218
13 .096 38 .335 14 .105 39 .350 15 .113 40 .362 16 .121 41 .375	0 0.9991 26 1.218 1 1.0073 27 .228 2 .0146 28 .238 3 .0221 29 .248 4 .0296 30 .259 5 .037 31 .269 6 .045 32 .280 7 .052 33 .291 8 .060 34 .302
15 .113 40 .362 16 .121 41 .375 17 .130 42 .388	4 .0296 30 .259 5 .037 31 .269
18	6 .045 32 .280 7 .052 33 .291
19 .148 44 .430 20 .157 45 .444 21 .166 46 .444	0 0.9991 26 1.218 1 1.0073 27 .228 2 0.146 28 .238 3 0.221 29 .248 4 0.296 30 .259 5 0.37 31 .269 6 0.45 32 .280 7 0.52 33 .291 8 0.60 34 .302 9 0.68 35 .313 10 0.76 36 .325 11 0.84 37 .337 12 0.92 38 .349
20 .157 45 .444 21 .166 46 .458 22 .175 47 .472 23 .185 48 .472 24 .195 49 .386 .501	10 .076 36 .325 11 .084 37 .337 12 .092 38 .349
.501	6 045 32 280 7 052 33 291 8 060 34 302 9 068 35 313 10 076 36 325 11 084 37 337 12 092 38 349 13 101 39 361 14 109 40 374 15 118 41 387
	II 1- 110 41 397 I
Wright, 1871	H 1# 135 43 .414 1
% d % d	18 .144 .428 19 .153 .45 .443 20 .162 .46 .458 21 .171 .47 .473 22 .180 .48 .489 21 .190 .49
15°	11 22 .189 49 .495
0 0.999 40.8 1.384 10.4 1.079 48.5 .474	22 .189 49 .495 24 .199 50 .512 25 .208
1 23.5 .189 49.8 .514	
30.0 .247	
	Perkin, 1889
Berthelot, 1873	% d
mol % t d	4° 10° 15° 25°
0.74 18 1.023	0 - 0.9997 0.9991 0.9971 15.47 1.1162 1.1113 24.602038 .1990 39.71 1.38503774 .3708 56.006103 .6017
1.50 18 .046 3.01 13 .093	24.60 2038 1990 39.71 1.3850 - 3774 3708 56.00 - 3774 3708
4.35 14 .131 9.24 13 280	65.59 1.7978 1.7914 .7857 -
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
32.84 15 .792	

Pickering, 1893	Heydweiller, 1912
% d % d	M d M d
15° 0 0.999868 52.010 1.558199 5.4590 1.038674 52.723 .567934 10.2258 .075679 53,029 .574158 18.8511 .122792 53,936 .587476 20.5357 .165279 53,949 .587695 25.7661 .216692 54.813 .601491 31.4824 .278364 55.701 .616653	18° 0.0998 1.00426 2.016 1.1114 0.2000 .00989 3.877 .2152 0.5030 .02692 6.473 .3601 1.0060 .05499
34,7356 .316402 55.761 .618365 39,3818 .374766 56.458 .628475 41,2954 .400219 56.648 .632845 42,9777 .423322 57.613 .648607 44,349 .441741 57.691 .651415	Hamtzsch and Dürigen, 1928 % d % d
44.7985	20° 4,3043 1.02590 13.042 1.09200 6.038 .03866 18.342 .13672 8,253 .05460 23.032 .17947 9,422 .06433 30.110 .25060 10,601 .06866 48.923 .48790
	Bonner, Bonner and Guerney, 1933
Taylor and Ranken, 1903-04	% d % d
M d M d M d	25°
0° 15° 25° 1 1.0530 1 1.0512 1 1.0489 2 .1052 2 .1020 2 .0990 3 .1540 3 .1495 3 .1460	47.03 1.4700 47.95 1.4832 47.14 .4716 48.19 .4866 47.27 .4733 48.47 .4908 47.40 .4752 48.83 .4961 47.56 .4775 49.28 .5030 47.74 .4802 49.80 .5116
Jones, 1904; Jones and Bassett, 1905 M	Taylor and Rankin, 1903 - 1904 M
0 0,99862 1.006 1.0546 0.0998 1.00429 2.014 1.1111 0.200 1.00989 3.872 1.2149 0.533 1.0269	

Rubien, 1911	Jones, 1904, Jones and Bassett, 1905
M n _D M n _D	M λ M λ
18° 0	0° 0.0614 244.0 1.229 194.2 .1229 238.2 1.843 174.7 .1843 230.5 2.457 171.0 .2457 227.5 3.072 145.8 .3686 224.0 3.686 129.3 .4914 220.3 4.300 115.8 .6143 211.7
Hantzsch and Dürigen, 1928	
₹ n _D	Johnston, 1906
20°	N λ
4.3043 1.33987 13.142 1.35438 6.038 .34270 18.342 .36433 8.253 .34618 23.032 .37367 9.422 .34837 30.110 .38921 10.601 .34924 48.923 .43992	0.001 233.4 .010 226.1 .5 214.7 2.5 152.5 5.0 105.8
Perkin, 1889	
% t $(\alpha)_{\text{magn}}$.	Heydweiller, 1912
15.47 16.5 1.2711 24.60 18 .4713 39.71 21 .8503 56.00 22 2.3207 65.59 17.4 2.6100	18° 0.0998 355 2.016 5101 0.2000 694.5 3.877 7070 0.5030 1655 6.473 7335 1.0060 3029
Kohlrausch, 1876	
% к т.10 [‡]	
18° 5.25 1990 153 10.52 3692 153 15.66 5005 151	
Taylor and Rankin, 1903-04	
N A	
0.	
1 203.0 2 175.0 3 148.3	

Heat constants	Water + Hydroiodic acid (HI)
Roozeboom, 1886	
mol% U mol% U	Bates and Kirschmann, 1919 M Do M Do
12 - 30°	m p ₂ m p ₂
0 1.0000 17.09 0.4694 0.50 0.9688 17.70 .4640 0.99 .9402 19.95 .4340 1.96 .8876 25.51 .3742 4.74 .7641 26.88 .3608 9.09 .6154 28.74 .3524 12.48 .5397 33.33 .3553 14.95 .5005 35.21 .3827	5,971 0,00051 8,697 0,0192 6,038 ,00053 9,251 ,0271 6,171 ,00093 9,332 ,0536 7,586 ,00355 9,776 ,0937
14.95 .5005 35.21 .3827 16.89 .4711	AT=== 1909
For Q dil. see author .	### ### ### ### ######################
Berthelot, 1873	1 120 3 162 15 170 45 163 58 162
mol% Q mix mol% Q mix initial final (by mole initial final (by mole HBr) HBr)	a = Dv/G, where G is the absorbed volume of Gaseous HI
0.37 0.19 0 9.24 3.03 0.69 0.74 0.37 0.015 12.43 0.56 1.21 1.50 0.75 .10 22.42 .40 3.15 3.01 1.49 .15 31.06 .44 5.46 4.35 0.37 .35 32.36 .75 5.61	Carrière and Ducasse, 1926
9.24 0.75 1.02 32.67 .75 5.68 9.24 1.92 0.94 32.84 .44 5.75	%(L) b.t. %(V) dew point
	64.9 86 98.8 60 64.0 100 98.5 62 61.1 108 96 75 60.0 112 93 84 59.4 118 90 95 58.0 123 70 121 56.8 124 69.8 122 56.7 126.5 56.7 126.5 55.5 126 55 126 54.9 125.8 51.7 125.5 54.0 125.2 23 123.2 52.75 124 15 122 52.5 123.2 5 120 50.0 118 1.5 105 48.0 116 0.5 101.5 42.7 111 0.3 101 39.0 109 0.2 100.25 33.6 107 0.1 100.1 27.3 105 6.03 100

Rudorff, 1862	Robinson and Stokes, 1949
8 f.t.	m osmotic coef. m osmotic coef.
2.71 -0.70 4.80 -1.30 7.55 -2.10 13.57 -4.25	25° 0.1 0.953 1.0 1.113 2 969 2 153 3 984 4 193 4 1.001 6 233 5 019 8 273 6 038 2.0 315 7 057 2.5 424 8 075 3.0 535
Pickering, 1893	.4 1.001 .6 .233 .5 .019 .8 .273 .6 .038 2.0 .315 .7 .057 2.5 .424 .8 .075 3.0 .535 .9 .094
% f.t. % f.t.	
(two series)	
5.70 -1.3 34.52 -27.9 9.171 2.9 36.171 33.2 9.61 2.6 36.53 31.9	Topsoe, 1870
13.82 4.7 38.51 37.2 16.059 6.7 39.645 43.4	8 d 8 d
16.059 6.7 39.645 43.4 16.38 6.0 40.35 42.7 16.84 6.4 42.12 48.2 19.53 8.8 43.057 55.4	130
9.61 2.6 36.53 31.9 13.82 4.7 38.51 37.2 16.059 6.7 39.645 43.4 16.84 6.4 42.12 48.2 19.53 8.8 43.057 55.4 22.122 11.4 44.07 558.2 22.54 10.9 46.08 77.4 25.29 13.5 46.42 66.7 25.772 14.9 48.74 -77 28.05 16.4 29.188 19.4 30.50 19.4 ice 32.39 22.7 32.674 -25.6	1 1.007 30 1.270 2 .014 31 .282 3 .021 32 .294 4 .028 33 .306 5 .036 .34 .319 6 .044 .35 .332 7 .052 .36 .345 8 .060 .37 .358 9 .068 .38 .371 10 .076 .39 .385 11 .084 .40 .399 12 .092 .41 .413 13 .101 .42 .428 14 .109 .43 .443 15 .117 .44 .458 16 .126 .45 .474 17 .136 .46 .490 18 .145 .47 .507 19 .154 .48 .524
(4+1)	12 .092 41 .413 13 .101 42 .428 14 .109 43 .443
48.850 -82.4 62.298 -36 51.703 71.9 62.632 35.9 52.045 74 63.76 36.0 54.277 58.9 63.779 35.5 54.602 56 64.622 36.4 56.480 50.4 65.31 36.8 56.774 50 65.510 38.2 58.582 43.1 66.60 39.5 58.731 42.9 67.261 43.1 60.588 38.8 67.53 42.9 60.624 37.8 68.57 -46.5	20
(9+1)	27 .237 56 .673 28 .248 57 .693 29 .259 58 .712
69.217 -47.8 71.118 -48.2 69.46 48.6 72.15 50.0 70.32 48.1 72.92 -53.5 71.09 -48.75	
73.111 -52.2 75.15 -51.0	Wright, 1871
73.95 56.0 75.97 -48.0 74.661 -47.8	% d % d
	15°
	0 0.999 39.2 1.441 5.9 1.052 47.2 .550 18.5 .174 51.9 .706 30.3 .296

Berthelot, 1873	Rubien, 1911
mol% d mol% d	M n _D M n _D
14°	18°
4.9 1.256 18.7 1.808 8.5 .400 21.4 .912 8.9 .413 23.5 .984 11.1 .536 25.0 2.031	0 1.33327 0.4979 1.34342 0.0998 .33524 0.9942 .35375 0.1990 .33732 2.0200 .37539
Perkin, 1889	Perkin, 1889
% d 4° 15° 25°	% ι (α) _{magn} .
0 0.9982 0.9991 0.9971 20.77 - 1.1760 1.1719 31.77 - 2966 .2939 (20°) 42.70 - 4494 .4424 56.78 1.7115 .7006 .6912 61.97 .8349 .8228 65.10 .9182 .9056 1.8947 67.02 .9600 .9472 .9357	20.77 20.4 1.5650 31.77 15.9 1.9526 42.70 15.2 2.4350 56.78 21.5 3.2170 61.97 17.6 3.5716 65.10 16.5 3.7793 67.02 21.1 3.8996
	Heydweiller, 1912
Rubien, 1911	M x M x
M d M d	18°
18° 0 0,99862 0,4979 1.04429 .0998 1,00775 .9942 .08980 .1990 1,01687 2,0200 .1857	0.0998 346.2 2.032 5179 .1990 685.7 4.020 7157 .4979 1606 5.460 7330 .9942 2958
	Berthelot, 1873
Heydweiller, 1912	mol% Q dil. initial final (by mole HI)
M d M d 18° 0.0998 1.00775 2.032 1.1857 .1990 .01687 4.020 .3691 .4979 .04429 5.460 .5033 .9942 .08980	0.93 0.31 0 2.70 .93 0.05 4.90 .71 .115 8.50 .32 .480 8.50 2.70 .430 8.90 2.80 .430 11.10 0.67 .950
Heydweiller, 1909	18.70 .89 2.180 21.40 .54 3.100 23.50 .54 3.740 25.30 .28 3.980
N n _D N n _D	
18° 0 1.33327 0.5 1.34346 0.1 .33525 1.0 .35387 0.2 .33734 2.0 .37497	

Ī	Maass and Hatcher, 1920
Water + Hydrogen peroxide (${ m H_2O_2}$)	
	% d 0° 1 8 °
Cartebard Vayanash and Tickner 1052	0 10
Scatchard, Kavanagh and Ticknor, 1952	0 0.99987 0.99862
mol% p mol% p mol% p	10.57 1.0419 1.0372 22.33 .0894 .0815
44.50° 60.00° 75.00°	40.14 .1655 .1552 56.70 .2404 .2270
51.40 27.417 96.19 19.30 95.96 42.72 84.23 26.10 85.72 53.86	l 61.20 .2610 .2465
51.40 27.417 96.19 19.30 95.96 42.72 84.23 26.10 85.72 53.86 90.00° 68.31 39.46 74.60 70.01 4 03 95.97 57.79 51.64 57.51 105.20	73.44 .3235 .3071 84.86 .3839 .3662
90.00° 68.31 39.46 74.60 70.01 90.00° 57.79 51.64 57.51 105.20 4.03 95.97 40.75 77.26 49.63 126.06	98,42 ,4144 ,3953
15.82 84.18 28 10 99 97 48 99 127.88	98.89 .4596 .4404
34.54 65.46 20.36 114.50 32.41 180.55 48.82 51.18 9.05 134.99 27.77 196.67 50.20 49.80 105.00° 7.45 225.10 67.43 32.57 105.00° 7.45 266.77	
1 50.20 49.80 10 72 225 in 1	
0U.40 +7.07	Huckaba and Keyes, 1948
90,06 9,94 49,85 413,33	
	% d % d
]	0°
	100 1.4709 80.023 1.3590 99.605 .4685 71.354 .3139
Kubaschewski and Weber, 1950 (fig.)	99, 605 .4685 71.354 .3139 99, 479 .4681 59.171 .2539
% f.t. E % f.t. E	96.282 .4499 40.009 .1660
. پاين اين اين اين اين اين اين اين اين اين	96.282 .4499 40.009 .1660 96.228 .4493 19.979 .0803 95.987 .4483 9.657 .0379 89.379 .4100 0.000 0.9998
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	95, 987 . 4483 9.657 . 0379 89, 379 . 4100 0.000 0.9998
30 26 52.5 86 14 55.5 45.8 52.5 52.5 E ₁ 90 -10 -55.5	المناسبة المراقبة الم
20 -12 -27 87 21 55.5 30 26 52.5 86 14 55.5 45.8 52.5 52.5 E ₁ 90 -10 -55.5 48.5 -52.5 -50.5 100 0	
	Kubaschewski and Weber, 1950 (fig)
	% d
Mironon and Day and John	0° 18°
Mironov and Bergman, 1951 (fig.)	0 10 10
% f.t. E % f.t. E	$\begin{array}{cccc} 0 & 1.0 & 1.0 \\ 20 & 1.08 & 1.07 \end{array}$
0 0 0 60.2 -55.7 -55.7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
20 -12 -52.5 70 39 55.7	80 1.33 1.31
40 40 52 5 76 5 20 FE 2	100 1.46 1.44
46.1 52.5 52.5 90 13 -55.7 49 -50.2(2+1) - 100 -2 -55.7	
Carrara, 1892	
t d	
0 24.0 0.99732	
17.98 23.2 1.02674	
11.85 23.3 .04625 14.50 25.4 .05009	
14.50 25.4 .05009 25.10 23.2 .09438	
	i I

Easton, Mitchell and Wyne-Jones, 1952	Satterfield, Wentworth and Demetriades, 1954(fig.)
% d % d	mo1 % (V) n (in V) 170° 200° 240°
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 15.8 16.8 18.2 20 15.5 16.5 17.8 40 15.2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Maass and Hatcher, 1920
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	18.17 76.14 23.70 73.51 27.22 76.26 28.14 73.67 34.58 76.55 44.31 74.13 56.06 77.31 59.27 74.67 59.27 77.38 60.83 74.73 86.31 78.30 79.01 75.29 90.66 75.67
40.67 .1515 89.68 .3848 42.97 .1610 89.78 .3855 47.02 .1785 89.89 .3855	Carrara, 1892 % n Hα D Hβ Hγ
0.0 0.9880 47.07 1.1580 6.96 1.0106 57.21 .2020 12.53 0.289 59.60 .2123 20.36 .0564 66.22 .2425 30.21 .0914 74.37 .2814 39.25 .1267 86.53 .3419	23 - 24° 0 1.33045 1.33306 1.33712 1.33108 7.98 .33560 .33746 .34162 .34497 11.85 .34039 .34228 .34653 .34973 14.50 .34027 .34197 .34601 .34959 25.10 .34754 .34967 .35396 .35792
0.0 0.9615 52.55 1.1390 11.40 0.9950 60.65 .1726 14.84 1.0054 66.20 .1952 26.80 .0428 73.40 .2299 37.97 .0834 84.30 .2788 45.03 .1116 89.30 .3038	Cuthbertson and Maass, 1930
	 На Нз Ну
Maass and Hatcher, 1920	24.5° 13.85 1.3409 1.3476 1.3515 35.48 .3557 .3623 .3657
% п % п 0° 18° 0° 18°	55,60 3701 3768 3814 74,79 3851 3914 3984 89,36 3957 4032 4091
0.00 1778 1054 52.49 1876 1235 5.71 1762 1061 59.62 1900 1266 15.21 1740 1066 68.50 1938 1285 14.48 1734 1072 75.03 1929 1292 22.33 1758 1105 83.15 1909 1300 34.05 1805 1157 89.47 1873 1301 44.83 1846 1204 98.89 1828 -	

										
Giguère	e, 1947				Gigue	re and Geo	ffrion, 1	949		
Я	С	n D	F	G	%	n _D	25°	%	n _D	25°
0.0 10.0 19.8 30.8 41.1 49.7 60.0	1.3313 .3380 .3446 .3522 .3597 .3659 .3738	.3398 .3465 .3541 .3616 .3679 .3759	.3440 .3507 .3585 .3660 .3723 .3804	3405 .3473 .3540 .3619 .3695 .3758 .3842	0.00 10.10 19.98 30.11 40.03 50.10	1.33299 .33946 .34603 .35296 .35986 .36724	1.33251 .33881 .34521 .35203 .35885 .36611	60.66 70.15 79.86 92.36 96.26 99.30	1.37508 .38284 .39072 .40157 .40495 .40774	1,37389 ,38151 ,38927 ,39998 ,40333 ,40607
70.1 79.9 90.4 99.0 100.0	.3820 .3901 .3991 .4067 .4076	.4097	.3886 .3968 .4058 .4137 .4148	.3924 .4007 .4095 .4176 .4186	Cuthbe	ertson and	Maass, 1	930		
	1.3311	20° 1,3329 1	.3371	2402	%	ε	%		ε	
0.0 10.0 19.8 30.8 41.1 49.7 60.0 70.1 79.9 90.4 99.0 100.0	.3375 .3441 .3515 .3587 .3651 .3729 .3811 .3892 .3980 .4057 .4066	.3394 .3460 .3534 .3607 .3671 .3749 .3831 .3912 .4001	.3371 .3435 .3502 .3577 .3651 .3715 .3793 .3876 .3958 .4047 .4127 .4136	.3402 .3468 .3536 .3612 .3685 .3750 .3830 .3914 .3995 .4085 .4167 .4175	0 6.9 14.0 20.8 25.8 32.0 36.3	84.4 94.0 108.5 113.5 116.0 119.0 121.1	0° 43.2 50.63.81.988.99.	23 1 30 1 27 1	116.2 115.0 108.8 101.6 91.2 89.2	
		249			Grass	ir and T	faular 10	150		
0.0 10.0	1.3307 .3370 .3434	1,3326 ,3389	1.3367 .3431	1.3400 .3464 .35 2 9	mo1%	jr. and T	laylor, 19	ε		
19.8 30.8 41.1	.3508 .3581	3389 3453 3527 3601	3495 3569 3643	.3603		# 0,0	30°	20°	10°	0°
49.1 60.0 70.1 79.9 90.4 99.0 100.0	.3643 .3722 .3804 .3883 .3969 .4046 .4054	.3664 .3743 .3824 .3903 .3991 .4067 .4076	.3707 .3788 .3870 .3949 .4037 .4114	.3678 .37743 .3822 .3907 .3985 .4076 .4153 .4160	0.00 4.00 6.3 15.8 16.0 22.4 31.5 36.2 37.8	7.4 8 11.4 2 26.2 2 26.5 1 35.3 1 46.5 6 51.8 5 53.5	76.7 76.3 76.9 77.6 77.5 76.8 77.7 78.6	80.4 80.7 81.3 81.9 82.4 83.1 82.6 83.3 83.9	84.1 85.0 85.7 87.3 87.7 88.8 88.6 88.9	88.0 89.4 90.4 92.8 93.1 94.6 94.7 95.3 95.9
0.0 10.0 19.8 30.8 41.1 49.7 60.0 70.1	1,3305 ,3365 ,3427 ,3499 ,3572 ,3636 ,3711	1,3322 .3383 .3446 .3518 .3592 .3656 .3731	1.3364 .3424 .3487 .3561 .3635 .3706 .3776	.3458 .3522 .3596 .3669 .3735 .3812	49.4 61.8 75.2 93.7 98.1 98.5	7 64.9 7 75.4 9 85.2 7 96.6	75.9 73.6 69.9 69.5 68.6	81.3 78.8 74.7 73.2 73.6	89.8 89.5 87.3 84.3 80.1 78.7 79.0	95.0 93.5 90.4 85.9 84.7 84.9
79.9 90.4 99.0 100.0	.3711 .3796 .3873 .3959 .4032 .4040	.3893 .3980 .4053 .4061	.3939 .4027 .4101 .4111	.3976 .4064 .4140	4.0 6.3 15.8 16.0 22.4 31.5	11.4 32 26.2 32 26.5 41 35.3 51 46.5 26 51.8	93.7 95.3 98.2 98.4 100.6 101.2	103.7 106.7 108.0 109.9	115.4 11 7. 0	124.7 125.0
					37.49.49.461.75.93.98.	85 53.5 47 64.9 87 75.4 29 85.2 77 96.6 13 99.0	102.6 101.7 100.1 104.5(? 92.4 91.3 91.4	109.6 109.0 107.7) 112.0 98.7	116.9 11 7. 1	125.0 126.5 125.3
								======		:

Mitchell and Wynne-Jones, 1956	Dezelic, 1935
mol% ionization mol% ionization	mol% f.t. mol% f.t.
constant constant 25 0 14.0 61.5 9.1	10 0.4 60 2.3 20 0.8 70 2.7 30 1.2 80 3.05 40 1.6 90 3.4
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	40 1.6 90 3.4 50 1.95 100 3.8
44.9 9.0 99.4 12.4 50.8 9.0	La Mer and Baker, 1934
	mol% f.t. mol% f.t.
Kubaschewski and Weber, 1950 (fig.) mol% Q mix mol% Q mix	1.29 0.053 82.82 3.207 15.39 .632 93.38 3.578 19.97 .824 41.70 1.670
20 140 60 270 40 250 80 170 50 280 100 0	41.58 1.679 41.58 1.679 59.15 2.351
Water + Heavy water (D_2O)	Selwood and Frost, 1933
nater heavy water (D ₂ 0)	β d
Combs, Googin and Smith, 1954	20°
% t p % t p 48.23 9.84 8.45 48.24 30.01 29.87 45.97 20.00 16.30 48.22 40.01 52.31 45.97 25.00 22.19 48.21 50.00 87.86	0 0.9982 31 1.0314 63.5 .0664 92 .0970
45.97 25.00 22.19 48.21 50.00 87.86 45.97 30.00 29.91	**************************************
Wynne-Jones, 1935	La Mer and Baker, 1934 mol% d mol% d
mol% (at b.t.)	mo1% d d
L V	1.29 0.998442 59.15 1.06040 15.39 1.01346 82.82 .08598
11.96 10.97 49.17 46.67	15.39 1.01346 82.82 .08598 19.97 .01836 93.38 .09746 41.70 .04105 100 .1047 41.58 .04150
La Mer, Eichelberger and Urey, 1934	Lutere, 1934
% f.t. % f.t.	mol% d mol% d
1,23 0.053 39.9 1.679	25°
14.70 .632 39.5 1.670 19.10 .824 94.6 3.800	0.000 0.9971 0.617 1.0618 .164 1.0142 .817 .0831 .340 .0326 .970 .0992 .460 .0451 1.000 .1024
	-

	Selwood and Frost, 1933				
Jones and Ray, 1937					
mol% d mol% d	% n _D				
25°	20°				
0.59 0.997679 70.57 1.072725 22.57 1.021117 82.81 .085984 54.24 1.055114 97.59 .102032	0 1, <u>332</u> 93				
54.24 1.055114 97.59 .102032	31 .33138 63,5 .32992 92 .32849				
	92 .32849				
Longsworth , 1937					
mol% d mol% d	Selwood and Frost, 1933				
25°	X X				
0.000 0.997055 61.023 1.06279	20°				
0.000 0.997055 61.023 1.06279 0.0175 0.997074 73.358 1.08570 20.142 1.018840 99.166 1.10376 40.243 1.040440 100.000 1.10466	$ \begin{array}{cccc} 0 & -0.72 \\ 92 & -0.65 \end{array} $				
40,243 1,040440 100,000 1,10466	0.00				
	Doehlemann and Lange, 1935				
Selwood and Frost, 1933					
η	mol $\%$ Q dil. initial final (by mole $\mathrm{D}_2\mathrm{O}$)				
20°	150				
$0 \\ 31 \\ 1140$	98 75 1 40 -30 6				
63.5 1270 92 1370	98.75 1.40 -30.6 98.75 1.45 -30.3				
1370	2 5°				
	0.93 0.05 -0.11 0.93 .05 .23				
Selwood and Frost, 1933	1 1.39 .06 .39				
4 0	1.74 .075 .61 2.05 .08 .56				
20°	2,70 .10 .83 2,70 .20 .77				
	3.02 .12 .90				
0 72.75 31 71.50	$egin{array}{cccccccccccccccccccccccccccccccccccc$				
63.5 69.80 92 68.10	5, 08 .17 .63 7, 07 .23 .84 13, 02 .30 -3, 68				
	1 22.92 .45 -7.06				
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				
Jones and Ray, 1937	55.90 .40 -17.60				
mol% o(relativ)	67.80 .0 -21.40				
25°	73.30 .40 -23.70				
0.59 1.00000	$\begin{array}{cccccccccccccccccccccccccccccccccccc$				
22.57 0.99992 54.24 .99973	89.70 .30 -28.70 98.75 .20 -31.90				
70.57 .99962 82.81 .99953	98.75 .10 -32.70 98.75 .06 -30.9				
97.59 .99947	35°				
	98.75 1.50 -31.4 98.75 1.55 -31.7				

Lutere, 1934	$egin{array}{cccccccccccccccccccccccccccccccccccc$
† n	V L ₁ V L ₁ 37.8° 71.1°
$_{ m H_{_{\! Z}}}$ D $_{ m Hg}$ $_{ m gr}$ $_{ m H_{\! B}}$	1
0% 20.0 1.33118 1.33300 1.33449 1.33712 1.34025 45.9%	6.80 98.94 0.82 6.80 94.93 0.50 10.21 99.25 1.23 10.21 96.43 0.76 13.61 99.40 1.65 13.61 97.26 1.02 17.01 99.49 2.07 17.01 97.71 1.28 20.42 99.54 2.50 20.42 98.01 1.54 26.61b 99.60 3.33 27.22 98.37 2.06 34.03 98.56 2.58 40.83 28.65 3.10
-0.2 1.32986 1.33159 1.33301 1.33556 1.33857 +0.9 .32987 .33159 .33301 .33558 .33858 3.2 .32988 .33160 .33302 .33558 .33859 5.1 .32987 .33160 .33301 .33557 .33858 10.1 .32976 .33150 .33290 .33546 .33848 15.1 .32953 .33127 .33265 .33523 .33824 20.0 .32920 .33092 .33232 .33490 .33789 25.1 .32875 .33048 .33186 .33443 .33743 30.0 .32825 .32998 .33137 .33391 .33693 35.0 .32764 .32936 .33075 .33330 .33630	47.64 98.68 3.64 51.07 98.69 3.95
10.1 .32976 .33150 .33290 .33540 .33848 15.1 .32953 .33127 .33265 .33523 .33824 20.0 .32920 .33092 .33232 .33490 .33789	13.61 90.46 0.77 13.61 73.75 0.57
97.7%	27,22 94.77 1.56 27.22 85.89 1.27 40.83 95.97 2.30 40.83 89.84 1.91 54.44 96.47 3.01 54.44 91.55 2.50 68.05 96.64 3.71 68.05 92.48 3.08 85.06 96.65 4.63 85.06 93.07 3.82
$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	13.61 90.46 0.77 13.61 73.75 0.57 27.22 94.77 1.56 27.22 88.89 1.27 40.83 95.97 2.30 40.83 89.84 1.91 54.44 96.47 3.01 54.44 91.55 2.50 68.05 96.64 3.71 68.05 92.48 3.08 85.06 96.65 4.63 85.06 93.07 3.82 102.08 96.51 5.77 102.08 93.30 4.63 119.09 96.30 6.90 119.09 93.27 5.50 136.10 96.02 8.23 136.10 93.03 6.47 153.11 95.68 9.73 153.11 92.63 7.50 170.12 95.31 11.45 170.12 92.13 8.60 187.14 94.91 13.46 187.14 91.59 9.78 204.15 94.51 15.86 204.15 91.04 11.06 238.17 93.71 238.15 91.04 - 272.20 92.88 - 272.20 88.70 - 306.22 92.03 - 306.22 87.50 - 340.25 91.15 -
25.0 32654 32816 32947 33192 33482 30.05 32608 32770 32900 33144 33436 35.0 32552 32715 32844 33089 33376	272, 20 92, 88 - 272, 20 88, 70 -
100.0%	171.1°
20.0 1.32683 1.32844 1.32976 1.33221 1.33509	13.61 39.81 0.29 153.11 86.46 3.51 27.22 68.28 0.94 170.12 87.40 8.05 40.83 77.72 1.55 187.14 86.81 9.10
Water + Hydrogen sulfide (H ₂ S)	27, 22 68.28 0.94 170.12 87, 40 8.05 40.83 77.72 1.55 187.14 86.81 9.10 54.44 82.24 2.14 204.15 86.06 10.24 68.05 84.66 2.73 238.17 84.36 - 85.06 86.46 3.51 272.20 82.48 - 102.08 87.42 4.35 306.22 80.61 - 119.09 87.88 5.20 340.25 78.64 - 136.10 87, 97 6.10
Selleck, Carmichael and Sage, 1952	
t P t P	
hydrate + L ₁ +V -0.40 ^a 0.92 -0.40 ^a 0.92	Cailletet and Bordet, 1882
10.00 2.76 18.66 6.80	t p dissoc. t p dissoc.
-0.40 ^a 0.92 -0.40 ^a 0.92 +4.44 1.54 +12.00 3.40 10.00 2.76 18.66 6.80 15.56 4.93 22.55 10.21 21.11 8.79 25.33 13.61 26.67 15.75 27.33 17.01 29.50 ^a 22.10 28.89 20.42 29.50 22.10 a = quadruple point: hydrate + ice +L+V	1.0 2.0 15.5 6.6 5.4 2.3 18.1 7.9 8.0 3.0 22.8 11.0 10.8 3.6 25.0 16.0 12.2 4.7 14.0 5.4
t P mol%	
V L ₁ L ₂	
29.50 22.10 99.71 3.23 99.70 38.95 27.22 99.58 3.35 99.10 58.60 40.83 99.16 3.69 97.27 74.11 54.44 98.54 4.02 95.54 87.00 68.05 97.58 4.35 94.02 98.42 85.06 95.52 4.79 93.25 100.17 88.87 94.23 4.88 94.23	

Water + Ammonia ($ m NH_3$)	t P 17.5% 20.0% 22.5% 25.0% 27.5% 30.0%
Heterogeneous equilibria	0 77 03 117 144 5 191 220
Perman, 1901	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
% p 61.3° 46.4° 34.4° 20° 0°	1 14 140.5 170 219 273 335.5 412
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Perman, 1903	50 037.5 897 1080
t p 0% 2.5% 5.0% 7.5% 10.0% 12.5% 15.0%	62 1061
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	t P1 0% 2.5% 5.0% 7.5% 10.0%
2 5.5 13.5 20.5 28.5 47.5 36.5 60.5 46.5 46.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5 1	12 10.5 10.5 10 9.5 9 14 12 12 11.5 11 10.5 16 13.5 13.5 13 12 12 18 15.5 15 14.5 14 13.5 20 17.5 17 16.5 15.5 15 22 20 19 18.5 17.5 17 24 22.5 21.5 21 20 19.5 26 25 24 23.5 22 21.5 28 28.5 27 26.5 25 24.5 30 31.5 30.5 30 28.5 28 31.5 32 35.5 34.5 34 32.5 31.5 32 35.5 34.5 34 32.5 31.5 33 40 38.5 38 36.5 35.5 34 40 38.5 38 36.5 35.5 36 44.5 43 42.5 41 39.5 38 49.5 48 47.5 46 44.5

0246810214681222468333246880244466855546860 t 0246811246833324688022468803334688444468855546860 t 0246883333468444468855546860 t 0246883333468444468855546860 t 02468833334688444468855546860 t 02468833334688444468855546860 t 024688333346884444688655546860 t 0246886000 t 024688600 t 024688600 t 024688600 t 024688600 t 024688600 t	12.5 % 3.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5	15% 3.5 4.5 5.5 5.5 5.5 5.5 5.5 5.5 5	49 54 59.5 65.5 72.78.5 86 94 103 1122.5 134 145.5 158 172 200.5 217 233.5	71 78.5 86.5 95 104 114 124.5 136 149 162 176 191 208 225.5 244 263 284.5 306 329	22.5% 3.5 4.5 6.7 8.9 10.5 11.5 16.5 20.5 23.6 29.32 36 29.32 36 40.43.5 48 53.5 58.5 71.5 70.7 117 128 141 154.5 169 184.5 201 2238 258.5 280 302.5 3352 380		914 1278 1775 772 895 1507 2116 1063 2157 2975 753 1198 1764 1753 976 1655 2867 2873	69 76 83 82 102 112 123 136 150 165 181 198 217 236 334 363 395 429 466 6 6 70 80 908 41 44 59 70 30 50 60 8 19 29 30 11 144 30 30 11 1910	87.5 97 107 118 130 143 157.5 173 190 208.5 228.5 228.5 250 324.5 353 382.5 415 451 535 23.39 40 91 89 44 47 17.53 23.39 40 91 89 45 46 89 41.55 98 98 98 98 98 98 98 98 99 91 91 91 98 98 98 99 90 91 91 91 91 91 91 91 91 91 91	111 123 135. 149 163. 179. 216. 215. 236 258. 283 307 368 403 441	100 110 110 120 80 90 99 110 70 80 80 90 99 110	. 65 . 12 . 09 . 84 . 98 . 97 . 78 . 440 . 41 . 80 . 41 . 13 55
42 44 46 48 50 52	42 46 50 54.5 59	91 99 107.5 116.5 126 136	145.5 158 172 186 200.5 217	208 225.5 244 263 284.5 306	280 302 5	20.3 20.4 40.5	2.5% 1.61 1.52	1910 5.0% 7 1.61 1.51 1.51	Dp ₂ /p ₂ (fo 7.5% 10.0% 1.61 1.59 1.56 1.53 1.50 1.44	1.58 1.53 1.47	15.5% 1.56 1.53 1.46	17.5% 1.55 1.53
	2 4 6 8 10 11 14 6 8 10 1	0 3.5 2 4 4 4.5 6 5.5 8 6.5 10 7.5 11 8.5 11 1.5 12 16.5 13 13 14.5 14 10 11.5 18 13 20 14.5 22 16.5 23 30 33.5 30 26.5 33 23.5 30 26.5 33 33.5 33 4.3 33.5 34 47.5 44 59 46 65 47.5 48 72 50 87.5 51 106 106 1128.5 107 128.5 108 117 109 128 128 128 128 128 128 128 128 128 128	0 3.5 3.5 2 4 4 4 4 4.5 4.5 6 5.5 5.5 8 6.5 6.5 10 7.5 7.5 11 8.5 8.5 11 10 9.5 11 11 12.5 11 12.5 11 12.5 12 14.5 14 12 16.5 16 12 16.5 16 13 12.5 14 10 9.5 16 11.5 17 18 13 12.5 18 13 12.5 18 13 12.5 18 14 20.5 18 23.5 23 28 23.5 23 28 23.5 23 28 23.5 23 30 26.5 25.5 28 23.5 23 30 30.5 32 30 30.5 32 30 32.5 32 30 33.5 32 30 36.5 25.5 34 47.5 40.5 47.5 45 47.5 45 48 72 68.5 54 96 66 65 44.5 47.5 45 67.5 16.5 88 117 - 66 128.5 - 1 2.5% 5.0% 0 6 13 2.6.5 14.5 6 7.5 16.5 8 8 18 10 9 20 11 12 4.5 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 16 12:5 27 18 14 30 17 37 24 18.5 40.5 25 44.5 28 22.5 49 30 25 58.5 34 30 64 38 33.5 34 30 64 38 33.5 35 76.5 40 38 33.5 40 44 46 99 46 50 107.5 55 94 136 54 69.5 147 55 158.5 55 16.5 58 80 170.5	0 3.5 4, 4 4 4, 5 4 4 4, 5 6 5.5 5.5 5.5 8 6.5 6.5 6.5 10 7.5 7.5 7.5 7.5 112 8.5 8.5 8.5 14 10 9.5 9.5 14 10 9.5 9.5 14 11 11 18 13 12.5 112.5 120 14.5 14 14 121 16.5 16 16 124 18.5 18 18 120 20.5 20 230 26.5 25.5 24.5 231 30 26.5 25.5 24.5 232 30 26.5 25.5 24.5 233 30 26.5 25.5 24.5 234 33.5 32 31 336 37.5 36 34.5 338 42.5 40.5 38 40 47.5 45 42 53 40 47.5 45 42 53 40 79.5 75.5 52 87.5 83 56 60 106 - 57.5 16.5 26.5 58 8 18 29.5 59 20 32.5 51 17 - 60 128.5 - T P2 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 13 20 2.5% 5.0% 7.5% 0 6 7.5 16.5 26.5 2.4 7.5 16.5 26.5 2.5 2.5 49 38.5 3.5 3.5 54 3.5 54	0	0 3.5 3.5 3.5 3.5 3 3 3 4 4 4 4 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 5 4 5	0 3,5 3,5 3,5 3,5 3,5 3,5 3,5 3,5 3,5 4,4 4,4 4,4 4,5 4,5 4,5 4,5 4,5 4,5 4	0 3,5 3,5 3,5 3,5 3,5 3,5 3,5 3,5 2,5 4,4 4,5 4,5 4,5 4,5 4,5 4,5 4,5 4,5 4	0 3.5 3.5 3.5 3.5 3.5 3.5 3.5 9.5 3.5 9.2 4.4 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5	0	0	9

Postma, 1914 and 1920		62.7mo1%	54.7mo1%	51.5mo	1%
t p t p	-72.8 -66.4	- 41	14 23	-	
100%	-62.95 -59.5	53 68	39	23	
-77.6 46 -54.7 231 -76.2 52 -52.3 267	-56.1 -52.7 -49.25	$ \begin{array}{r} 86 \\ 106 \\ 133 \end{array} $	63	39 - 63	
-76.2 52 -52.3 267 -73.9 62 -49.9 309 -71.5 74 -47.5 355	-45.8 -42.4	164 201	101 125	99	
-69.1 88 -45.1 407 -66.7 104 -42.7 465	-38.9 -35.5	247 298	154 189	122 151	
-61 0 145 -38 9 572	-32.0 -28.6	360 429	229 278	184.5 224 270	
-59.5 170 -35.5 683 -57.1 198 -33.1 771	-25.1 -21.7	-	334 398	270 544 387	
	-18.2 -14.7 -11.25	-	560	544	
t p 88.0mo1% 84.1mo1% 77.8mo1%	-7.8 -4.3	770	746	-	
		p	t	p	
-73.2 56 54 46 -69.8 73 68 59		.7mo1%	35.9mo		
l -50 5 147 130 130 133	-59.5 -49.25	10.5 22.5	-45.8 -35.5	20 42	
-56.1 183 173 152 -52.7 226 214 188	-38.9 -28.6	47 90	-25.1 -21.7	79 98	
-49.3 278 263 231 -45.8 339 319 282 -42.4 411 389 342	-24.4 -18.2 -11.25	114 164	-18.2 -11.25	119 175	
-42.4 411 389 342 -38.9 495 413 -35.5 591 558 -	4.3	335	+2.7	251 351	
-32.0 703 - 589 -20 3 803 -	-0.8 +7.2 +13.2	396 578 741		434 566	
-28.6 - 787 - -26.85 758		2.7mo1%	25.6m	01%	ĺ
	-62.95 -52.7	4 9	-51.65 -42.4	5 10	
74.6mol% 69.5mol% 66.3mol%	-42.4 -32.0 -25.1	19 39 61	-42.4 -32.0 -21.7 -11.25	20 39 72	
-76.6 32 -75.9 - 29 - -70.1 - 45 -	-18.2 -14.7	92 111.5	-6.0 -2.5	96 116	
1 -69.8 39	-7.8 -0.8	163 233	-6.0 -2.5 +6.2 +11.4	182 235	
~62.95 - 75 64 ~59.5 112 95 82	+6.2 +9.7	327 385			
l -55.4 146 124 -					~
-52.0 - 154 - -49.3 214	mo1% -70	° -65°	p -55° -45°	-35° -:	30° -25°
-49.25 - 182 159 -45.8 262 223 196 -42.4 318 272 240 -38.9 383 330 290.5	100.0 82	2.5 117.5	226 409.	5 699.5	774 -
1 -35.5 460 396 351 1	88.0 72 84.1 67 77.8 58	2.5 117.5 1 102 7 96 3 84 3 77	196 355 185 334 162 295 149 274	606 573 505	736 - 650 -
-28.6 651 -26.85 - 611 -	74.0 5.	5.5 65	127 233	472 407	610 774 525 668
-25.1 595 -24.8 780 -22.7 - 747 - -19.9 760	66.3 38 62.7 31 54.7 17	55 45.5	110 205 92 172. 54 106	360 5 305.5	469 597 399 - 257 335.5 207 271.5
-19.9 - 760	54.7 17 51.5 13	19.5	54 106 42 83 14 30.	155 5 6l	207 271 5 83 110
	60.3 48 62.7 31 54.7 17 51.5 13 38.7 35.9 32.7 25.6	4	11 21. 8 16	5 43.5 31.5 16.5	59 79.5 45 61.5
	25.6 -	. -	- 9	16.5	23 31

t	p	t	p		93,18mo	1%	86	.30mo1%	
-93.5 -90.1 -86.7 -86.0	NH3 cr 8.9 12.7 18.3 19.8	-83.3 -81.6 -78.9	31.1 40.5	109.2 114.7 120.4 124.8 129.9 135.4	66. 72. 80. 85. 93.	2 5 1 8 3	147.7 151.5 157.1 163.7 169.2 174.3	107 113 121 131 139 146	.2 .7 .7 .8 .1
-93.1 -91.8 -90.2 -87.7 -86.4 -85.4	10.9 11.9 13.6 18.7 21.6 23.1	V+NH ₃ cryst -84.0 -82.8 -81.8 -80.7 -78.6		149.4 148.0 157.4 159.9 165.9 167.5 171.1 165.7 162.8	123. 121. 133. 99. 109. 115. 131.	9 .3 .6 .3 .9 .9 0 .7	177.5 180.0 182.7 186.6 190.5 195.5 197.1 191.9 189.7	149 151 153 155 157 154 109 98	.6 .7 .8 .2 .8 .1
		L+V+ (1+ 2)				74.1	mol%		
-82.0 -81.3 -79.6 -78.9 -78.8 -79.1 -80.3	10.8 12.6 15.6 19.6 21.2 23.5 22.5 22.2	-81.3 -82.6 -83.5 -85.2 -87.4 -88.1 -89.9 -90.3	21.4 19.9 20.2 17.4 16.0 15.5 12.9	216.4 201.0 207.0 222.6	175. 161. 167. 178.		+ 220 6	176 139	.1
-80.6			12.0	mo1%		t.		b.t.	
-79.3	4.7	.+V+(1+1) -82.8	6.0		'60mm		380m		
-81.6	7.1	-85.5 +V+ ice	5.5	100 94.2 88.9 81.5	30 28	3.35 9 3.5 3.3	100 67.6 61.8 58.6	-46. 30. 35. 26.	4 0
-6.3 -10.5 -10.8 -13.6 -15.7 -17.8 -19.2 -20.6 -23.0	11.5 13.5 13.7 14.1 14.3 14.4 14.2 13.9	-24.7 -28.2 -28.7 -42.0 -44.4 -45.4 -50.3 -57.8	13.0 11.8 11.6 7.5 6.3 6.2 5.0 3.1	76.0 68.7 55.7 50.8 46.0 43.1 38.1 35.5 22.8 17.9	26 22 9 -3 +3 5 9	.1	54.8 51.2 48.0 45.5 42.4 36.2	22. 18. 14.	9 4 0 2
t	mo1%	t	mo1%	 					
	L+V+	C(interpola	tion)	 					
-5.0 -10.0 -15.0 -17.0 -20.0	4.6 8.1 11.2 12.3 14.0	-35.0 -45.0 -55.0 -65.0 -70.0	20.3 23.3 25.6 27.9 28.7	Foote,	1921	p		 p	 %
-25.0	16.4		20.7	10			 20°)°
t	P	t	P	410	32.66	762	34.69	7 76	29.45 31.76
	100	 1%		 568 772	36.96 40.96 44.34	960 1181	39.04 41.10	923 1106	34 .2 6
123.5 123.7 126.8 128.5 129.7 130.9 131.8 132.4	95.4 95.6 99.5 103.9 106.2 108.2 110.0 111.4 crit.t.	121.6 123.2 124.4 126.1 127.3 128.5 129.9 130.8 132.1 132.3	92.5 95.2 96.9 99.8 101.8 104.0 106.6 108.2 110.6 111.2 crit.t.	964 1182 1388 1547	44.34 47.69 50.58 52.69	1377	43.52 45.42	1298 1536	36.59

Neuhausen and Patrick, 1921						Mittasch,		d Schliete		
p ₂	P ₁	p ₂	1	P1		tt		t	P2	
00			40°			20.7	70%	29.5		
1062 1100 1334 1868 2078	1.04 1.03 0.84 0.51 0.35	112 138 157 158 199 213 235 299	20 3: 39 2: 79 2 2 32 2 26 2 32 2 81 1 46 1	2.1 9.8 6.5 6.4 2.4 0.8 9.3 8.9 8.9		0.3 0.3 5.8 10.7 20.45 21.2 30.1 30.75 39.9	101 102 142 172.5 272.5 274.5 389 419 616 614	0.3 6.0 11.3 21.3 30.25 30.65 39.6 39.8 49.3 59.7	216 299.5 354 577 815 836.5 1172 1230 1629	
1288 1445 2113	8.3 7.4 5.9	290 300 339 399	53 1 95 1 57 1	8.3 7.8 7.4 7.4		40.0 50.45 60.2	918.5 1285.5	42	2296 2.65%	
2112 2647 2624 3563 3725 3942	6.0 4.5 4.6 3.7 3.4 3.1				عد العداجة جيز جيز عن الجيزيت شير خد	40. 0.5 6.3 11.0 21.55 30.85	75% 525.5 684 823 1195 1701	0.25 8.20 11.95 21.90 30.50 30.55	608 876 1023 1466 2055 2069	
mo1%	p ₂	P ₁	mo1%	P2	P1	49.	,05%	50	0.83%	
51.676 52.382 54.735 61.206 62.765 65.076 65.711 66.621	0° 915 944 1140 1409 1499 1684 1732 1865	1.25 1.19 0.97 .77 .708 .61	34.886 36.508 42.077 42.392 43.086 43.731 48.175	20° 728 798 1140 1165 1226 1281 1677 1938	9.4 9.25 8.6 8.55 8.4 8.3 7.05	0.28 0.44 7.05 11.45 20.30 30.55 31.0	867 880 1160 1404 2002 2854 2887	0.9 7.1 10.65	1001 1330 1566	
66.621	40°	.46	49.941 53.940 55.970 56.923	1938 2655 3076 3277 40°	6.33 5.1 4.45 4.15		gh, 1902 (at b.t.)		% ((at b.t.)
25.011 25.366	752 774	36.5 36.2 32.1	39.02 41.133	2180	20.5	v	I	L	v	L
30.690 32.686 33.134 36.326	752 774 1134 1335 1376 1787	32.1 29.5 29.10 23.9	42 925	2460 2832 3226 3214 3640	19.0 18.42 18.0 18.0 17.6	0 20 40 60		0 3 5.5 8.5	80 90 95 100	13 20 40 100
Malass a	nd Meun	iė, 1926		ر الله الله الله الله الله الله الله الل	نت شدن دن دن دن دن دن دن دن دن دن دن دن	I	ii, 1910			
t	P1	P2	t	P1	P2	mo1%	(L)	mo1%((v) 0°	
98.2 107.8 125.9 148.5 180.5	49.80% 306.9 314.8 330.0 348.9 375.4	323,1 331,5 347,3 366,8	98,2 107,8 125,9 138,5	48.80% 355.0 364.1 382.0 403.6	359.4 368.8 386.2 407.7	4 6 8 10 12 14 16 18	راده الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدوليون الدولي الدوليون الدوليون ا	53.3 65.5 72.9 78.1 82.2 85.4 88.3 90.5	64.6 73.2 78.9 83.3 87.0 90.3 92.9 94.9	

Wucherer, 1932	Franklin and Kraus, 1898
Equilibrium L - V (see author)	% Db.t. % Db.t.
::::::::::::::::::::::::::::::::::::::	83.57 3.852 94.16 1.116
Clifford and Hunter, 1933	84.09 3.966 94.60 .078 85.77 3.447 94.94 .011 89.19 2.300 95.00 .009 89.24 2.308 95.57 0.886 89.59 2.199 96.12 .736
P % P %	89.59 2.199 96.12 .736 90.48 1.987 96.90 .613
L V L V	90.48 1.987 96.90 .613 91.78 .663 97.33 .529 92.13 .631 97.34 .497 92.15 .604 98.20 .356
97° 127°	N 92.47 .554 98.52 .254
0.899 0 0 2.435 0 0 2.4 9.3 63.3 4.37 6.43 45.3	93.67 .272 99.08 .174
2.4 9.3 63.3 4.37 6.43 45.3 3.8 16.0 78.3 5.62 9.5 59 6.76 25.5 89.76 7.31 - 68.5 7.04 25.9 89.6 12.44 - 79.1	D b.t.= sol NH ₃
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
1 277 0 0 137°	Poetma 1014 and 1020
3.27 10.0 61.0 3.274 0 0 5.12 16.0 75.3 5.7 6.5 42.0	Postma, 1914 and 1920
8.55 25.0 86.4 9.06 - 66.2 14.90 - 78.5	mol% b.t.
1470	50mm 100mm 150mm 250mm 380mm 760mm
4 1.78 V V	100.0 -76.6 -67.2 -61.4 -53.35 -46.3 -33.4 88.0 74.6 65.3 59.15 51.1 43.8 30.4
3.35 6.5 - 4.332 0 0 4.35 9.5 61.5 7.3 6.5 40.6 5.8 14.7 73.2 9.3 9.5 50.2 10.63 - 11.84 13.6 62.4	84.1 74.1 64.35 58.3 50.1 42.8 29.3 77.8 72.0 62.5 56.3 47.0 40.5 26.8
10.63 - 11.84 13.6 62.4 16.3 19.5 75.0	74.6 70.85 61.1 54.9 46.6 39.1 25.4 69.5 68.6 58.7 52.4 43.8 36.3 22.3
	$\begin{bmatrix} 66.3 & 66.4 & 56.4 & 50.2 & 41.7 & 34.0 & 19.9 \\ 62.7 & 63.6 & 53.6 & 47.25 & 38.6 & 30.9 & 8.1 \end{bmatrix}$
	1 51.5 52.5 42.1 35.6 26.6 18.6 -
Raoult, 1874	1 35 9 37 7 21 2 14 6 -4 4 4 4 4 -
X b.t. X b.t.	32.7 28.35 16.6 -9.25 +0.65 9.4 - 25.6 -17.25 -5.3 +2.4 +12.75 -
760 mm	
45.50 28 66.00 12 49.50 24 72.75 8 54.25 20 80.25 4	
45,50 28 66.00 12 49,50 24 72.75 8 54,25 20 80.25 4 59,75 16 99,00 0	Cartes 10%
$X = g \text{ NH}_s \text{ in } 100 \text{ cc } \text{H}_2\text{0}$	Carius, 1856
8 8 500 CC 1120	t vol. gas/lcc t vol. gas/lcc
	743 - 744.5 mm 0.53 1034.185 14.41 736.579
Mallet, 1897	0.53 1034, 185 14.41 736, 579 4.60 920, 791 19.71 655, 321 9.54 822, 286 25.01 585, 727
b.t. g	20,01 303,727
743 - 744,5	
-10 52.72	
-20 63.87 -30 73.55 -40 74.65	
74.00	

		AND AND AND AND AND AND AND AND AND AND			
Roscoe and Dit	tmar, 1860]	Isambert, 1887
Absorption	4	p ₂		×	cc NH ₃ (V)/lcc H ₂ 0 t π
18 97 241 268 452 707 712 760	6.89 21.51 31.65 32.34 39.39 45.80 46.10 46.72			48.85 49.85 56.36 55.91 55.52 56.33 68.09 68.12	330 21.5 37.6 " 22.5 38.5 " 22.5 38.2 " 21.0 38.1 140 20.4 38.7 " 21.0 38.7 " 22.2 39.2
t	%	t		%	Almen , 1898
0	760 46.67	mun 30		28.72	% a. 10 ⁶
2 4 6 8 10 12 14 16 18 20 22 24 26 28	45.44 44.19 42.89 41.62 40.44 39.21 36.79 35.65 34.47 33.29 32.15 30.98 29.87	30 34 36 38 40 42 44 46 48 50 52 54		27.64 26.58 25.54 24.47 23.49 22.48 21.62 20.57 19.61 18.63 17.62 16.67 15.58	15° 0.45 1101 8.33 1084 20.49 1068 28.33 1061 34.95 1054 a = Dv/G, where G is the absorbed volume of gaseous NH ₈
Sims, 1862 Absorption					Freezing curve .
p %	t	X	t	Z	Guthrie, 1878
00		760 m			وروا و المراوي و
20.7 7.75 749.6 47.03 757.7 47.37 20° 45.5 9.09	2 4 6 8 10	47.34 46.04 44.72 43.34 42.00 40.62 39.17	52 54 56 58 60 62	21.53 20.95 20.38 19.80 19.22 18.63	% f.t. \$ f.t. 1 -0.8 10 -12.8 3 -3.2 15 -21.4 5 -5.6 20 -43.4
206.1 19.09 735.4 33.68 1525.0 44.78 2076.0 50.45 40°	12 14 16	39.17 37.93 36.63 35.31 34.13 32.89 31.83	64 66 68 70 72	18.03 17.42 16.81 16.25 15.58	Nichols and Wheeler, 1881
75.8 4.76	20 22 24 26	31.83	74 76	15,11 14,53	β f.t. absorption t.
184.3 10.07 701.1 24.35 1599.0 33.43 2129.0 37.46 100° 688.4 6.28 1078.0 9.42 1419.0 11.89	28 30 32 34 36 38 40	30,84 29,87 28,98 28,22 27,43 26,63 25,93 24,58 23,96 25,32 25,32 25,32 22,72 22,12	78 80 82 84 86 88 90 92 94 96 98	13.94 13.34 12.74 12.12 11.50 10.87 10.23 9.58 8.97 8.26 7.58 6.89	0 0.00 100.00 2.12 -5.40 93.20 5.61 -10.60 83.10 7.96 -14.10 76.40 16.19 - 59.00 29.00 - 39.80
		ر حبر حور میں میں میں بیدر میں میں اس اس اس اس اس اس اس اس اس اس اس اس اس		رو مواندو الدو الدو الدو الدو الدولو	

Pickering, 189	3		Postma, 19	14 and 1920			
% f.t.	% f.t.	% f.t.	mol %	f.t.	E	mol %	f.t.
1,55 -1,35 2,96 2,85 4,52 4,78 6,31 7,22 8,15 10,26 9,90 12,29 11,80 15,13 13,58 17,89 15,32 21,34 17,05 25,34 18,56 28,66 20,13 33,53 21,59 38,20 22,94 42,40 24,35 47,00 25,91 55,00 28,30 -66,70	1.93 -2.1 2.69 2.95 3.62 4.35 4.46 5.45 5.37 6.57 6.42 8.15 7.63 9.70 8.97 11.77 10.54 13.85 12.53 17.30 13.85 19.68 15.14 22.30 16.34 24.70 17.52 26.95 18.63 22.945 19.67 32.05 21.73 38.60 22.78 42.70 23.78 45.90 24.86 49.20 25.86 55.460 27.77 62.90	1.23 -1.30 1.89 1.90 2.64 2.85 3.38 3.80 4.23 4.83 5.25 6.20 6.31 7.55 7.40 9.10 8.52 10.75 9.37 12.30 10.56 14.10 12.11 16.75 13.45 18.95 14.86 21.90 16.30 24.68 17.83 27.80 19.38 32.05 20.77 35.80 21.08 39.45 22.08 39.45 23.25 43.55 24.27 47.40 25.19 51.60 26.05 54.60 26.98 60.40 28.14 -67.80	100 94.7 90.4 86.5 81.55 78.45 73.5 71.1 69.9 66.7 65.8 64.6 62.0 61.3 60.7 60.3 59.0 57.0 53.0 50.2	-77.6 -80.9 -83.7 -87.2 -92.4 -92.6 -88.7 -82.2 -80.3 -79.7 -78.8 -78.9 -79.2 -81.0 -81.7 -82.3 -82.9 -85.9 -85.9 -89.1	-92.5 -92.5 -92.6 	50.1 49.3 43.9 42.2 40.6 39.8 39.1 35.75 34.0 32.6 29.7 27.6 26.25 23.0 20.2 17.4 4.46 0 (1+	-79.1 -79.1 -83.0 -86.0 -88.2 -90.7 -91.7 -91.7 -96.7 -89.2 -74.2 -68.8 -63.7 -59.4 -94.5 -34.9 -28.6 -4.8
three series	27.77 62.90 28.59 66.60 29.36 -73.20	28.14 -67.80	Maass and	Hatcher, 19	122		
	د ۱۰ ما ۱۰ ما ۱۰ ما ۱۰ ما ۱۰ ما ۱۰ ما در او او او او او او او او او او او او او		%	f,t,	<u></u>	f.	t.
				·	<u>(+1)</u>		
Rupert, 1910 # f.t. 0.6 -0.6 0.7 0.5 1.2 1.0 2.1 2.2 2.2 2.2 2.9 3.7 3.8 5.0 4.0 4.6 4.9 5.9 5.1 7.1 5.5 7.0 5.7 7.3	\$\begin{array}{cccccccccccccccccccccccccccccccccccc	% f.t. 64.0 -79.4 64.6 79.0 65.1 79.0 66.9 79.1 67.4 78.6 68.4 79.4 69.3 80.2 70.1 81.0 71.9 82.0 74.3 84.6 76.9 88.8	0 3.41 4.31 18.05 19.60 21.10 23.90 25.20 26.40 27.70 28.80 31.10	-1.72 -13 -18 + 5 8 15 20 22 24 25 25 25	31.20 33.20 48.60 49.70 50.70 51.80 52.80 68.7 61.3 59.5	+25 25 9 1 0 - 6 - 9 below -78 " -53 " -32	.5
5.7 7.3 6.5 8.5 6.7 8.5	42.4 84.2 43.7 83.9 45.9 82.0	78.6 92.0 80.3 92.9 80.8 93.4	Elliott, l	024			
6.7 8.5 9.9 13.4 11.1 15.5	47.1 80.0 47.7 79.6	81.3 92.8 82.3 91.9	mol %	f.t.	mol %	f.	
12.6 19.0 13.2 20.2 14.7 22.9 16.4 25.8 18.3 32.6 19.6 35.3 21.4 41.9 23.0 46.8 24.5 52.6 26.1 60.7 27.6 -68.5	49.8 79.3 51.1 79.3 52.0 80.0 52.2 80.6 53.1 81.8 55.3 84.2 56.7 86.2 58.1 84.9 58.9 83.6 60.9 81.2 62.2 -79.5	82.5 92.4 82.8 90.4 83.7 90.6 84.9 89.6 85.2 88.8 86.1 87.1 88.2 85.3 90.0 84.2 92.4 82.9 93.6 81.7 94.8 81.0 95.7 80.3 97.4 70.4 98.9 78.6 100.0 -78.0	37.0 47.8 50.8 53.3 55.3 57.9 58.8 60.0 61.0 64.3 66.2 68.6 70.4 74.2 75.0 76.4 77.7	-97.00 -80.15 -79.12 -80.03 -84.54 -88.39 -87.25 -85.47 -85.03 -83.12 -79.39 -78.88 -79.10 -80.03 -82.05 -83.56 -85.54 -86.98	79.1 79.7 80.0 80.1 80.6 80.6 81.8 83.5 84.6 86.6 89.9 91.0 94.5 97.3 98.4 100	-90 -90 -94 -92 -92 -91 -90 -89 -87 -84 -83 -81 -79 -78 -78	. 88 . 20 . 56 . 33 . 10 . 83 . 86 . 07 . 05 . 13 . 45 . 01 . 34 . 58 . 11

Mironov, 1955	Nichols and Wheeler, 1881
% f.t. E % f.t. E	t d t d
100 -76.5 - 56.3 -85.1 -85.6 96.6 78.5 91.6 50.1 77.0(2) 86.7	29%
100 -76.5 - 56.3 -85.1 -85.6 96.6 78.5 91.6 50.1 77.0(2) 86.7 85.6 85.5 91.0 50.1 99.0 - 79.0 90.3 92.4 48.6 77.2 77.0 71.8 79.7 90.6 44.5 77.6 101.3 68.7 77.7 92.1 36.1 90.3 -101.3 65.4 77.3 77.5 32.0 96.7 - 64.9 77.5 85.0 24.4 51.4 - 59.0 -81.3 -85.3 15.1 -20.5 - 0 0 0 (1+1) -77.0° (1+2) -77.4°	20 0.8973 2 0.9080 18 .8986 0 .9088 16 .8998 -2 .9100 14 .9009 -4 .9111 12 .9022 -6 .9122 10 .9035 -8 .9131 8 .9043 -10 .9142 6 .9056 -12 .9151 4 .9068
	16.19% 20 0.9350 0 0.9427
Properties of phases . Density . Carius, 1856 d t d 14° sat.sol. 0.882 0.9953 0.53 0.8531 3.345 .9863 4.60 .8670	18
4,929 ,9792 9,54 .8767 6,905 ,9713 14,41 .8858 10,275 ,9598 19,71 .8923 14,430 ,9437 25,01 .8991 18,718 ,9277 .9100 .8970 30,270 .8970 .8970	20 0.9657 2 0.9702 18 .9663 0 .9705 16 .9670 -2 .9707 14 .9676 -4 .9709 12 .9682 -6 .9710 10 .9687 -8 .9711 8 .9691 -10 .9711 6 .9696 -12 .9711 4 .9699 -14 .9709
Wadhsmuth, 1876	
8 d % d 12°	% d % d
0 0.9995 18.29 0.930 2.10 .990 18.90 .928 2.58 .988 19.51 .926 3.06 .986 20.22 .924	14° 2.12 0.9913 16.19 0.9373 5.61 0.9766 29.00 0.9009 7.96 0.9676
4.53 .980 21.97 .918 5.02 .978 22.60 .916 5.52 .976 23.28 .914 6.02 .974 23.86 .912 6.52 .972 24.49 .910	Grüneberg, 1889
7,02 976 25,13 908 7,55 968 25,77 906 8,08 966 26,41 904	* d
8.08	15° 0 0.999 16.90 0.934 1.05 .994 18.35 .929 2.15 .989 19.80 .924 3.30 .984 21.30 .919 4.50 .979 22.85 .914 5.75 .974 24.40 .909 7.05 .969 26.00 .904 8.40 .964 27.70 .899 9.80 .959 29.50 .894 11.20 .954 31.40 .889 12.60 .949 33.40 .884 14.00 .944 35.50 .879 15.45 .939

I With the second	990		
Lunge and Wiernik, 1		ττ.105	Loewenfeld, 1905
% d τ.10	بالمستعمد متعاملين بريان	1 6 , 10	% d % d
0.00 0.999 18 0.45 .997 18 0.91 .995 19 1.37 .993 19 1.84 .991 20 2.31 .987 20	15° 15.63 0.935 16.22 .937 16.82 .935 17.42 .933 18.03 .931	7 40 5 41 8 41 42	15° 0 0,9993 15,4 0,9404 4.3 .9820 20,9 .9225 9.7 .9603 25 .9110
2.31 .989 20 2.80 .987 21 3.30 .985 21 3.80 .983 22 4.30 .981 22 4.80 .979 23	19.25 .925 19.87 .925	5 44 3 45 . 46 9 47	Ferguson, 1905
5.30 .977 23 5.80 .975 24 6.30 .973 24	22.39 .917 23.03 .915	49	* d * d
6.80 .971 25 7.31 .969 25 7.82 .967 26 8.33 .965 26 8.84 .963 27 9.35 .961 28	20.49 .923 21.12 .921 21.75 .919 22.39 .917 23.03 .915 23.68 .913 24.33 .911 24.99 .909 25.65 .907 26.31 .905 26.98 .903 27.65 .901 28.33 .899	51 52 53 54 55 56	15.6° 0 0.99904 21.78 0.91965 5.06 .97788 27.12 .90336 10.12 .95862 33.10 .88585 15.87 .93860 33.22 .88545
12'74 .949 34	29.01 .897 29.69 .895 30.37 .893 31.05 .891 31.75 .889 32.50 .887	58 59 60 60	Cheneveau, 1907
13.31 .947 35 13.88 .945 36	00.20 995	62	% d % d
13.88 .945 36 14.46 .943 37 15.04 .941 38	34.10 .883 34.95 .881	64 65	15° 0 0.9991 9.04 0.9613 2.94 .9860 12.22 .9498 5.93 .9734 15.47 .9393 7.46 .9675
Blanchard, 1904			
M d	M	đ	Baud and Gay, 1909
0 0.9971	25° 5.93	0.9559	% d % d
1.30 .9871= 2.66 .9768 4.16 .9660	6.60 8.39	.9515 .9393	15° 23.61 0.91470 50.62 0.8312 38.64 .87075 54.54 .8164 45.92 .84730 62.94 .7850 47.904 .84040 76.64 .7262 49.917 .83340 100.00 .6189
Zecchini, 1905	t đ		
0 5,4610 10,5440 17,1920	20 0.9982 17.8 .9755 17.2 .9558 24.3 .9333	34 35	Blanchard and Pushee, 1912
18.8400 21.8020	19 .9249 21.4 .9140	3	25°
			0 0.997 2 .983 4 .970 6 .958 8 .943

Ferguson, 1912	Newhausen and Patrick, 1921
% d % d	mol% d mol% d mol% d
15.6°	0° 20° 40°
0 0.9991 17.28 0.9340 0.40 .9973 17.76 .9324 0.80 .9955 18.24 .9309 1.21 .9938 18.72 .9293 1.62 .9920 19.20 .9278 2.04 .9903 19.68 .9263 2.46 .9885 20.16 .9247 2.88 .9867 20.64 .9232 3.30 .9850 21.12 .9217 3.73 .9833 21.60 .9202 4.16 .9816 22.08 .9186 4.59 .9788 22.56 .9171 5.02 .9781 23.04 .9176 5.45 .9764 23.52 .9141 5.45 .9764 23.52 .9141 5.45 .9764 23.52 .9141 6.31 .9730 24.50 .9126 6.31 .9730 24.50 .912 6.74 .9713	51,676 0,842 34,886 0,882 25,011 0,902 52,382 842 36,508 .878 25,365 .9005 54,735 .833 42,077 .864 30,690 .8833 61,206 .817 42,392 .862 33,134 .8755 62,765 .812 43,086 .854 36,326 .864 65,076 .803 43,731 .848 39,026 .856 65,711 .800 48,175 .845 41,133 .849 66,621 .795 49,941 .835 42,925 .843 53,940 .825 44,624 .837 55,970 .817 .44,557 .837 56,923 .815 .46,335 .828
5.02 .9764 23.52 .9141 5.45 .9764 23.52 .9141 5.88 .9747 24.01 .9126 6.31 .9730 24.50 .9112 6.74 .9713 24.99 .9097 7.17 .9696 25.48 .9082	Constant
6.31 .9730 24.50 9112 6.74 .9713 24.99 9097 7.17 .9696 25.48 9082	Carstens, 1924 % d % d
7.61 .9680 25.97 .9067 8.05 .9663 26.46 .9052 8.49 .9646 26.95 .9038	20°
8,93 .9630 27.44 .9023 9,38 .9613 27.93 .9009 9,83 .9596 28.42 .8995 10,28 .9580 28.91 .8981 10,73 .9564 29.40 .8966 11,18 .9547 29.89 .8952 11,64 .9531 30.38 .8938	0 0.9982 24.33 0.9120 5.05 .9790 26.64 .9050 10.37 .9584 30.71 .8930 15.34 .9410 32.89 .8870 21.49 .9208
12.56 .9499 31.36 .8909 13.02 .9483 31.85 .8895	Price and Hawkins, 1924 % d % d
13, 96	\$ d
13,49 .9450 32.43 .8867 14.43 .9435 33.32 .8853 14.90 .9419 33.81 .8839 15.37 .9403 34.30 .8825 15.84 .9387 34.79 .8811 16.32 .9371 35.28 .8797 16.80 .9356 Stocker, 1920 \$\frac{\partial \text{t}}{\partial \text{d}}\$ \[\begin{array}{c ccccccccccccccccccccccccccccccccccc	36.81 0.87519 20.34 0.92464 36.47 .87636 20.31 .92478 36.36 .87653 19.93 .92601 35.72 .87836 19.95 .92607 35.20 .88000 18.80 .92978 35.07 .88052 18.57 .93042 34.98 .88061 18.57 .93052 34.99 .88083 18.34 .93122 34.47 .88204 18.34 .93122 34.47 .88204 18.34 .93122 34.10 .88325 17.02 .93556 33.77 .88410 15.85 .93929 33.69 .88465 15.83 .93938 32.78 .88461 14.07 .94538 32.78 .88861 13.00 .94920 32.35 .88973 13.02 .94921 31.95 .89037 12.50 .95082 31.71 .89055 12.49 .95087 31.66 .89394 10.05 .95082 31.71 .89055 12.49 .95087 31.66 .89394 10.05 .95968 30.55 .89812 9.47 .96172 29.15 .90341 9.47 .96174 27.37 .91016 8.21 .96646 25.06 .91018 8.21 .96652 25.05 .91145 7.03 .97088 24.67 .91622 7.03 .97080 24.67 .91622 7.03 .97080 24.67 .91622 7.03 .97080 24.67 .91622 7.03 .97080 24.67 .91658 5.12 .97842 22.95 .91945 3.18 .98638 22.08 .92113 3.00 .98715 23.07 .92323 3.00 .98715 21.12 .92235

Mittaso	Mittasch, Kuss and Schlieter, 1926						ll and War			
t	t d t d t d					%			d	
	.7%	29.		40.7				20°	0 5057	
0.30 10.70 11.60 20.45 21.20 30.05 30.10 30.10 30.75 39.90 40.00 50.05 50.30 60.10	0.9294 .9239 .9239 .9198 .9196 .91475 .91485 .9148 .9145 .9091 .9089 .9090 .9026 .9024 .8963 .8964	0.30 0.55 6.00 11.30 11.40 20.50 20.50 30.18 30.25 30.65 39.65 39.80 49.00 49.90 59.70 59.90	0.9039 .9039 .9015 .8982 .8980 .8921 .8917 .8911 .8858 .8858 .8854 .8792 .8790 .8721 .8716 .8638 .8638 .8639	0.50 1.10 6.30 11.00 11.60 20.55 20.70 21.75 24.30 30.05 30.05 30.40 30.85 39.45 39.45	0.8734 .8730 .8689 .8654 .8576 .8576 .8567 .8567 .8545 .8499 .8499 .8495 .8495 .8495 .8495	7,72 14,61 24,14 29,70 35,98 44,56 47,45 53,48 54,40 61,16 63,64 64,51 70,47	.9094 .8890 .8730 .8458 .8363 .8149 .8111 .7850 .7744 .7705	72.49 75.07 78.38 80.95 89.72 89.81 90.94 91.41 96.66 96.68 97.18 97.36	0.7356 .7240 .7094 .6984 .6585 .6577 .6531 .6530 .6505 .6263 .6262 .6240 .6232 .61029	.5555255555
t	d	 			d	Schmidt,	1905			
		42.75	d.				%	t	π	
0.35 0.40 0.54 7.30 12.20 20.50 30.65	0 . 86 . 86 . 86 . 85 . 85 . 84	78 78 77 22 84	30.70 32.00 39.70 40.30 50.30 54.85	. 8 . 8			2.8 4.3 7.3 11.6 17.4 17.7 23	15.9 15.4 14.7 14.6 19.5 14.2 12.7	77. 76. 75. 73. 64. 70.	7 6 5 6 6
0.25 11.95 21.90	0.86 .85 .85	89 12	30.55 39.95 50.95	0.8 .8 .8		Carstens	s, 19 2 4			
0.28	0.84	49.05 96		0.8	222	%	π	%	π	الميونات المدراتهم الميوالين فين إليارة المواضي ميدران
0.44 7.05 11.45 20.30 30.55 30.80	. 84 . 84 . 83 . 83 . 82	96 92 37 97 20 24 22		. 8 . 8 . 8	129 0375 034 980 937	0 5.05 10.37 15.34 21.49	49.1 46.4 44.8 43.3 42.3	24.33 26.64 30.71 32.89	42.2 42.0 42.4 42.7	
0.9 7.1	0 . 84 . 83	36		0.8	350	ی افغان میں میں میں مشر اللہ علی میں میں اللہ اللہ اللہ اللہ اللہ اللہ اللہ الل	و حید خشو شدر حیل میل میل میل این اس داد. د خان ۱۳۵۰ - ۱۳۵۰ شدر کس ایس است اس این اس د		ر النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام ا ور النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام النام	میں دیکا ڈھٹر کیا۔ کی دینے شہر سے کیے کمیر کیا کہ اور اس

	% o % o
Pagliani and Batelli, 1884	18°
η 0° 5.80° 13.35°	0 72.56 16.5 61.31 4.48 67.39 15.6 57.73 9.30 63.76
0 1775 1479 1195 31.2 2346 - 1543 42.6 1989 1709 - 47.0 1773 -	
=======================================	King, Hall and Ware, 1930
	\$ o \$ o
Blanchard, 1904	200
M η(water=1) M η(water=1)	0.45 72.55 72.56 31.44 7.72 65.74 75.07 30.57 14.61 62.15 78.38 29.34
25° 1.30	24,14 58,02 80,95 28,11 29,70 55,58 89,72 25,22 35,98 52,29 89,81 25,11 44,56 48,08 90,81 24,57 47,45 46,62 90,94 24,42 53,48 42,65 91,41 24,70 54,40 41,63 96,66 23,02
Blanchard and Pushee, 1912	61,16 37,90 96,68 23,09 63,64 36,40 97,18 22,78 64,51 35,87 97,36 22,81 70,47 32,99 100,00 22,03
N η(water=1)	72,49 31.84
25°	
0 1.000 2 .040 4 .081 6 .121 8 .169	Optical and electrical properties .
	Zecchini, 1905
	% t n _D % t n _D
Domke, 1902 *	0 20 1.33298 17.1920 24.3 1.3416 5.4610 17.8 .33600 18.8400 19 .3432 10.5440 17.2 .33869 21.8020 21.4 .3450
0 73.0 15 61.3 5 66.5 20 59.3 10 63.6 25 57.7	Cheneveau, 1907
	==:
Loewenfeld, 1905	15° 0 1.3334 9.04 1.3384
% o % o	0 1.3334 9.04 1.3384 2.94 .3349 12.22 .3402 5.93 .3366 15.47 .3424 7.46 .3375
$\begin{array}{ccccc} 0 & 74.60 & 15.4 & 60.11 \\ 4.3 & 70.61 & 20.9 & 62.99 \\ 9.7 & 59.83 & 25 & 63.67 \end{array}$	ال ويانت البيان ويون ويوني في البيان ويون ويون ويون البيان الله والبيان الله والبيان الله والبيان الله والبيان الله والبيان الله والبيان ويون ويون ويون ويون ويون ويون ويون و

Thermal constants	Vrevskii, 1910 and Vrevskii and Sawaritzki, 1924
Mollier, 1909	mol % Q diss mol % Q diss (cal/mole) (cal/mole)
t Q mix initial final (by lKg NH ₃ liqu.) 0 0.42 14.8 192.1 - 0.48 15.0 193.6 - 18.9 10.5 172.5 11.8 166.4 - 43.7 13.4 127.5 - 44.1 13.5 127.6	0.79 8571 7.36 8514 1.57 8613 16.55 8398 3.14 8633 20.62 3328 3.26 8626 24.75 8250 4.09 8606 31.45 8079 4.50 8557 38.02 7884 4.91 8592 41.67 7811 5.62 8575
- 43.7 13.4 127.6 - 44.1 13.5 127.6 14.3 32.8 13.8 139.2 14.5 36.4 13.9 127.8 15.9 37.7 12.6 121.5 14.5 42.0 14.1 119.3 26.5 49.0 12.2 83.5 - 50.5 13.4 83.6 - 54.9 12.7 76.1 40.1 59.6 13.1 31.6 45.3 64.3 13.1 19.5 74.9 82.7 12.9	1.08 8336 16.02 8123 2.16 8314 17.00 8104 3.17 8316 17.89 8085 4.07 8309 18.79 8066 5.14 8289 19.63 8048 6.22 8275 20.65 8031 7.11 8264 21.41 8007 8.06 8253 22.27 7988 9.07 8241 23.09 7972 9.67 8232 23.91 7951 11.05 8215 24.75 7960
Baud and Gay, 1909	12.10 8193 25.38 7922 12.97 8178 31.45 7785 14.02 8163 38.02 7597 15.02 8144
## Q mix (ca1/100g) % Q mix (ca1/100g) 18.08	0.68 8104 7.57 8022 1.55 8096 8.51 8025 2.29 8090 9.34 8009 3.01 8081 10.33 7991 3.90 8076 16.55 7918 4.92 8069 20.62 7832 5.79 8051 24.75 7750 6.68 8076 0.96 7845 4.61 7817 1.77 7809 5.56 7814 2.71 7814 13.05 7813 3.62 7818
Vrevskii, 1910	Zinner, 1934
mol% Q diss mol% Q diss	Heat of mixing (see author)
0.79 68 1.1 90 1.6 135 3.2 264 3.3 282 6.3 516 4.9 422 8.1 665 6.5 558 11.0 905 7.5 636 13.0 1060 16.6 1390 16.0 1301 20.6 1717 16.6 1340 24.8 2042 24.8 1970 41° 61° 0.7 55 1.0 75 2.3 185 1.8 138 4.9 397 2.7 212 6.7 538 3.6 283 8.5 683 4.6 360	Water + Hydrogen phosphide (PH ₃) Cailletet and Bordet, 1882 t p dissoc. t p dissoc. (8+1) 2.2 2.8 14.0 8.9 4.0 3.0 15.0 9.8 6.8 3.9 17.0 11.0
10.3 826 5.6 434 16.6 1311 13.1 1017 20.6 1615	9.0 5.1 20.0 15.1 11.0 6.7

Water + Hydrazine (H _u N ₂)	b.t. mol% b.t. mol%	
•	V L V	L
	124.8 mm 281.8 mm	
Lobry De Bruyn and Dito, 1902 - 1903	56.17 0.00 0.00 74.38 0.00	0.00
b.t. mol% b.t. mol%	58.9 0.79 9.60 77.6 0.79 63.8 3.40 20.09 83.8 5.94 2 69.7 15.57 32.03 88.4 13.21 3	9.09 2.22
L V L V	69 7 15 57 32 03 88.4 13.21 3	1.34 5,95
2	74 2 48 26 49 87 93 3 45 95 4	9.66
102.2 9.4 0.18 120.2 51.8 44.6 104.6 14.2 - 120.35 53.3 48.75	73 9 57 33 54 78 93.2 57 33 5	5.58 8.15
105.9 - 1.6 120.45 54.8 52.8 107.45 19.5 2.7 120.5 56.0 53.5	69.1 93.10 84.72 89.6 89.31 8	81.83 98. 7 6
109.15 - 3.9 120.5 58.5 58.5	66.8 99.65 98.95 86.5 99.46 9 411.2 mm 560.4 mm	0.70
111.0 - 6.2 120.5 62.5 - 114.05 34.0 13.8 102.25 65.8 72	·	0.00
117.95 41.7 25.0 119.9 68.3 7 5.5	86.9 0.85 9.35 95.5 1.02	0.00 9.94 9.70
# 119.2 45.2 34.9 119.25 73.6 83.7	1 93.5 5.39 21.84 106.4 16.14 3	.9.70 31.67
119.8 50.3 41.7 118.8 76 -	93.5 5.39 21.84 106.4 16.14 3 98.4 14.79 31.67 110.9 42.11 4 102.8 37.84 45.22 111.3 54.77 5	8.47 4.78
	103.4 49.12 51.51 110.2 78.12 6	8.82
	103.6 55.92 55.01 107.9 90.63 8 102.2 75.25 67.63 105.2 98.60 9	33.03 7.37
	99.4 90.30 83.80	
Bjorkman, 1947	96.8 98.60 98.06 700.6 mm 700.6 mm	
% mol % b.t.		E4 0 0
L V L V	97.75 0.00 0.00 117.6 55.23 5 101.5 0.40 8.84 116.9 74.42	54.89 67.36 83.96
4.56 0.74 2.6 0.1 -	101.5 0.40 8.84 116.9 74.42 106.8 5.63 20.54 114.2 90.45 112.6 15.85 31.84 111.7 98.76 117.2 43.08 48.58	83.96 9 7. 87
18.2 2.45 11.1 1.4 104.9 19.73 2.62 11.9 1.5 106.2	112.6 15.85 31.84 111.7 98.76 117.2 43.08 48.58	77.07
18.2 2.45 11.1 1.4 104.9 19.73 2.62 11.9 1.5 106.2 28.5 6.91 18.3 4.0 107.8		
38.9 16.5 26.4 10.0 114.2		
46.2 26.4 32.6 16.8 116.8		
46.7 28.6 33.2 18.4 116.8 50.8 34.2 36.7 22.6 118.9	Lecat, 1949	
55 4 44 3 41 1 30 0 <u> </u>	% b.t.	
62.0 56.2 46.7 22.6 118.9	و مواجع المداعي مين بين عدر منوط المداعد المداعية المداعة عن أنها منه المداعة	
62.1 56.8 48.0 42.5 121.7	58.5 120 Az 100 113.5	
	110,0	
Burtle, 1952	Semishin, 1938	
p Az mol%	mol% f.t. mol% f.t.	,
124.8 53	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
281.8 54	6.18 4.0 57.39 51.0	
411.2 55.5 560.4 55	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
700.6	15.06 13.6 66.71 32.9	
	18, 18 16, 8 71, 81 20, 9	
	22.11 32.1 74.72 17.0 25.94 41.1 77.53 14.4	
	26.99 50.7 82.58 9.6	
	44,14 55.3 89.84 4.0	
	46.60 52.1 94.19 1.4 50.07 -46.8(1+1) 100.00 +1.7	

Mohr and Audrieth, 1949	Semishin, 1938				
mol% f.t. mol% f.t.	% d				
3.11 -3.80 45.8 -52.6 3.71 4.30 46.5 52.2 4.43 5.30 50.2 51.7 (1+1) 5.10 6.40 50.8 52.0 7.06 9.80 52.9 52.7 7.51 10.30 54.0 52.6 8.58 12.70 55.8 50.3 11.20 19.10 56.2 52.8 ? 12.10 22.00 57.1 46.8 12.50 22.30 57.1 46.8 12.50 22.30 57.1 46.2 13.30 24.70 57.6 44.2 13.80 25.30 59.1 40.2 14.70 30.30 62.5 34.1 15.20 30.80 62.8 32.7 16.50 37.30 70.5 20.4 17.60 41.60 74.9 15.6 18.20 44.30 76.2 14.8 19.20 46.30 83.6 83.7 23.70 65.90 96.4 0.1 31.40 75.80 97.1 +0.2 35.40 61.70 98.2 +0.9 43.00 -53.70 99.3 +1.6	0° 25° 50° 0.00 0.9999 0.9971 0.9881 1.98 1.0025 0.9995 .9903 7.48 0.019 1.0061 .9952 9.17 .0150 .0082 .9972 13.05 .0207 .0121 1.0000 16.57 .0250 .0152 .0022 21.18 .0308 .0192 .0042 26.89 .0351 .0231 .0084 28.77 .0382 .0246 .0095 31.43 .0401 .0257 .0108 33.90 .0420 .0264 .0116 36.65 .0440 .0278 .0120 40.05 .0454 .0293 .0128 43.70 .0466 .0305 .0133 47.29 .0473 .0313 .0135 49.18 .0477 .0319 .0137 51.84 .0481 .0322 .0136 56.77 .0480 .0318<				
% f.t. % f.t.	% n				
0.0 0.0 54.7 -56.0 13.3 -11.0 55.4 56.5 21.4 23.4 57.9 54.1 29.8 46.7 60.5 53.2 34.9 63.6 62.2 52.0 36.8 67.3 63.9 51.4 38.9 82 68.0 52.4 39.6 84 70.1 49.2 42.1 83 77.0 29.8 43.3 78 87.7 11.2 47.7 66.7 95.6 3.4 50.9 63.1 96.9 2.8 51.6 61.8 97.8 +1.2	0° 25° 50° 0.00 1789 894 550.0 1.98 1826 923 560.6 7.48 2054 1056 634.4 9.17 2135 1108 650.6 13.05 2345 1204 718.4 16.57 2622 1303 770.3 21.18 2868 1462 839.4 26.89 3098 1567 878.9 28.77 3202 1600 894.9 31.43 3312 1620 940.6 33.90 3405 1650 944.6 33.90 3405 1650 944.6 33.90 3405 1650 944.6 33.90 3405 1650 944.6 34.05 3532 1685 969.2 43.70 3552 1705 981.5 47.29 3555 1710 991.2				
Dito, 1901-02	51.84 3530 1696 987.3 56.77 3358 1642 967.7 60.41 3224 1612 947.3				
% d % d	63.64 3094 1534 922.3 69.34 2764 1435 881.4				
0 0.9991 15° 14.0 1.0142 72.0 .0440 26.45 .0272 74.9 .0421 34.25 .0340 78.5 .0400 40.85 .0389 80.0 .0379 46.40 .0425 84.0 .0358 55.30 .0461 90.8 .0300 59.90 .0464 100.0 .0114	71.83 2615 1389 857.1 77.82 2267 1244 802.8 83.14 1996 1124 746.7 89.88 1633 1085 700.2 100.00 1365 902 673.1				

	W-som t	Zluogili <i>sia</i> s	oid (Sig.H.)	
Dito, 1904-05	water * 1	. Iuosiiicic	icid (SiF ₆ H ₂)	
mol∜ flow in sec. 0° 25°	Stolba,	1888		
	Я	d	% d	
0 182.8 89.2 11.4 229.5 118.5 19.0 268.9 138.6 35.25 341.6 171.6 45.5 352.9 177.7 54.5 343.2 182.5 65.1 296.5 158.5 74.2 259.2 144.1 81.8 216.1 134.6 89.6 178.6 111.2 100.0 133.4 88	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	17.5° 0.9987 1.0067 .0148 .0229 .0311 .0394 .0478 .0562 .0647 .0733	18 1.1543 19 1.638 20 1.733 21 1829 22 1.926 23 .2022 24 .2120 25 .2219 27 .2420 28 .2521 29 .2623 30 .2725	
Kretschmar, 1954 (fig.) # sound velocity (m/sec) 25°	10 11 12 13 14 15 16 17	.0820 .0908 .0997 .1086 .1176 .1266 .1358 .1451	28 .2521 29 .2623 30 .2725 31 .2829 32 .2934 33 .3048 34 .3145	
0 1500 20 1650 40 1850 60 1950 80 2050 100 2100	LXVII. WA	TER + ANHYDR	IDES AND ACIDS	
Water + Antimony trifluoride (SbF ₅)		hlorine mono	xide (Cl ₂ 0)	
Rosenheim and Grünbaum, 1909	%	p ₂	×	P ₂
\$ f.t.			0°	
79.37 0 81.64 20 81.91 22.5 93.12 25 84.93 30	7.1 14.3 19.1 25.2 28.9	1 5 10 20 30	31.9 34.6 36.2 37.6 38.1	40 50 60 70 75
Water + Antimony trichloride ($SbCl_3$)	4.9 11.0 14.8 19.5 22.6	1 5 10 20 30	24.8 26.6 28.1 29.3 29.8	40 50 60 70 75
van Bemmelen, Meerburg and Noodt, 1903			2 0°	
% f.t. % f.t. 85.77 0 92.00 35 89.05 15 93.20 40 90.17 20 95.06 50 90.83 25 98.02 60 91.41 30 100.00 72	3.4 7.4 10.0 13.3 15.8	1 5 10 20 30	17.6 19.1 20.5 21.7 22.2	40 50 60 70 75
21.71 00 100,00 72				

WATER + ANTIMONY TRIFLUORIDE

Dito 1004-05	Water + Fluosilicic acid (SiF ₆ H ₂)				
Dito, 1904-05 mol% flow in sec. 0° 25°	Stolba, 1888				
	Ж	đ	%	d	
0 182.8 89.2 11.4 229.5 118.5 19.0 268.9 138.6 35.25 341.6 171.6 45.5 352.9 177.7	0 1	17.5 0.9987 1.0067	18 19	1.1543 .1638	
54.5 343.2 182.5 65.1 296.5 158.5 74.2 259.2 144.1 81.8 216.1 134.6 89.6 178.6 111.2 100.0 133.4 88	1 2 3 4 5 6 7 8 9	.0148 .0229 .0311 .0394 .0478 .0562 .0647 .0733	20 21 22 23 24 25 26 27 28	.1733 .1829 .1926 .2022 .2120 .2219 .2319 .2420 .2521	
Kretschmar, 1954 (fig.) % sound velocity (m/sec)	10 11 12 13 14 15 16	.0908 .0997 .1086 .1176 .1266	29 30 31 32 33 34	.2623 .2725 .2829 .2934 .3048 .3145	
25°	17	. 1451			
<u> </u>		ر من حصوص میں میں میں میں نمو میں اندر میں اندر میں میں اندر میں اندر میں اندر میں اندر میں اندر میں اندر اندر ر میں اندر اندر اندر اندر اندر اندر اندر اندر			
0 1500 20 1650 40 1850 60 1950 80 2050 100 2100	LXVII. <u>w</u>	ATER + ANHYD	RIDES A	AND ACIDS .	
Water + Antimony trifluoride (SbF ₅)		Chlorine mon		(Cl ₂ O)	
Rosenheim and Grünbaum, 1909	%	p ₂		X	P₂
g f.t.			0°		
79.37 0 81.64 20 81.91 22.5 93.12 25 84.93 30	7.1 14.3 19.1 25.2 28.9	1 5 10 20 30		31.9 34.6 36.2 37.6 38.1	40 50 60 70 75
The second secon			10°		
Water + Antimony trichloride (SbCl ₃)	4.9 11.0 14.8 19.5 22.6	1 5 10 20 30		24.8 26.6 28.1 29.3 29.8	40 50 60 70 75
van Bemmelen, Meerburg and Noodt, 1903			2 0°		
% f.t. % f.t.	3.4	1 5		17.6	40
85.77 0 92.00 35 89.05 15 93.20 40 90.17 20 95.06 50 90.83 25 98.02 60	7.4 10.0 13.3 15.8	5 10 20 30		19.1 20.5 21.7 22.2	50 60 70 75
91.41 30 100.00 72					

Water + Chlo	orine dioxide ((C10- N		Jauch, 1	1921		
######################################	armi dronide ((0102)			N	U	
Bray, 1906					18°		
M	f.t.	М	f.t.		0.5	0.95645 .9156	
1					2 3	. 8481 . 7753	
0.382 0.426	0.161 0.188	0.657 1.035	0.305 0.455		4	.7140	
0.498 0.531	0.228 0.221	1.092 2.023	0.465 0.801				
0.400 0.409	-0.79 E 0.0	1.60 1.61	18.2 tr.t. $1.0 L_1 + L_2$	Water +	Iodic acid (IO ₃ H	,	
0.437 0.624	+1.0	1.73 1.60	10.7 14.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10010 0011 (10311	,	
0.890 1.29	5.7 10.0 15.3	1.60	18.2	Lescoeur	, 1890		
		ر المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المر المراجعة المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المرا	ر التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ التاريخ	t	p dissoc.	t	p dissoc.
	,,,			20	(1+1) 1	78.5	165
				40 69	9 114	85 100	293 526
Water + Chl	oric acid (HC	(10 ₃)			A.T	100	
Rubien, 191				Dee		1000	
М	d	n _D	- است الحواصة حد حد حد حد حد حد مد مد مد مد مد مد		im and Liebknecht,		
	18°			[%]	b.t. %	b.t.	
0 0,4105	0.99862 1.01870	1.33327 .33694		0 3.20	100 5.26 100.120 5.53	100,184 100,201	
0.821	.03859	.34053	:	3.34 5.00	100.120 5.53 100.111 5.70 100.165 9.70	100.230 100.385	
1.642 3.284	.07813 .1567	.34 77 0 .36163		5.18 5.22	100.190 23.05 100.196	100.772	
		سرن میں شیر سیواندہ سے شیر شیر اسر شیوندر اد شیر امار شد امار امار امار امار شیر شیر شیر شیر امار ا			100,170		
Heydweiller	. 1912			Graschi	ıff, 1905		
M	d	 н		%	f.t.	% f	, t,
	18°						
0,0817	1,00261	283. 1		$\frac{1.78}{4.35}$	-0.30 I ₂ 0 ₅ 0.67	0.59 - 0.59	.108 .218 .300
. 1635 . 4105	.00663 01870	552.7 1322		7.17 17.66	1.01 1.90	1.78 2.51	.414
.8210 1.6420	.03859	2469 4310		27.65 54.19 60.72	2.38 4.72	3 16	.483 .507
3.2840	.07810 .15670	6404		71.04	6.32 12.25	4.37 5.36	.672 .799
=======================================	البرا الله الله الله الله الله الله الله ال			72.20 73.80	13.50 15	5,67 7.18	.831 1.007
				76.20 72.80	19 -14 F	11.96 17.65	.478 .900
Heydweille	r, 1913			74.10 75.60	0 10 ₃ H +16	27.64 2 54.2 4	2.385 1.722
N	n _D			77.70 80.00	40 60	60.7 6	3.320 2.25
	18°			82.50 83.00	80 85	-	
0	1.333 .33 7	27		85.20 86.50	101 110 tr.t. 10 ₃ H-		
0.5 1.0	.342	11		87.20 88.30	125 I ₃ 0 ₈ H		
2.0 3.0	.350 .359	78		90.50	160		
	موشو خومد کی خومد می این _{میرک} موانی ک			=======			

Abel, Redlich and Hersch, 1934		Heydweiller, 1912
m f.t. m f.t.		M d M d
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	-	18° 0.0997
		Luhdemann, 1935
	1	N d N d
Thomsen, 1874		25°
mol % d mol %	đ	0 0.99707 5.4532 1.76607 1.3807 1.19706 5.6534 1.79362 2.3362 .33223 6.8087 1.95300 2.4171 .34352 7.7358 2.08047
0 0.9988 0.62 0.33 1 0258 1 20	1.0512 1.1004	2.4171 .34352 7.7358 2.08047 3.2498 .45999 9.8442 2.36858
Groschuff, 1905		Randall and Taylor, 1941
% d % d		m d
0°		25°
0.55 1.0041 8.18 1.0751 1.09 1.0088 15.26 1.1491 2.15 1.0184 27.23 1.2921 4.24 1.0375		0.1888 1.0256 0.9760 .1349 2.2540 .2984 3.6132 .4547 10.0510 2.0209
Kämmerer, 1910		Moles and Perez, 1932
% d % d		ر بنے سے بنے بنے بر بر بن بنے میں میں میں میں میں اس میں اس میں اس میں اس میں اس میں اس میں اس میں اس میں اس می
14°	-	% η(water=1) % η(water=1) 25°
0 0.9993 35 1.4418 1 1.0046 40 .5360 5 .0256 45 .6303 10 .0517 50 .7243 15 .1215 55 .8675 20 .2084 60 .9939 25 .2764 65 2.1253 30 .3474		3.2 1.0218 26.8 1.2093 9.1 .0437 33.3 .3375 20.0 .1125 46.0 .6500
		Rubien, 1911
		M n _D M n _D
Rubien, 1911		18°
M d M d 18° 0 0.99862 1.004 1.14530 0.1001 1.01363 2.010 1.28828 0.2003 1.02841 4.018 1.56903 0.5022 1.07257		0 1.33327 1.004 1.35648 0.1001 .33563 2.010 .37923 0.2003 .33799 4.018 .42429 0.5022 .34499

Robinson and Baker, 1946-47	van Wyk, 1906
Isopiestic solutions at 25°	mol% f.t. mol% f.t.
m ₁ m ₂ m ₁ m ₂	(1+1)
	94 -40.0 56.6 +48.0 90.7 -21.5 50.0 50.0
1179 1100 2 015 2 425	83.3 +2.2 47.9 49.6 80.2 12.0 43.7 40.0
.2647 .2743 .450 3.029 .3336 .3472 .560 .186 .3815 .3991 .584 .223 .4747 .5011 .715 .410	94 -40.0 56.6 +48.0 90.7 -21.5 50.0 50.0 83.3 +2.2 47.9 49.6 80.2 12.0 43.7 40.0 77.7 17.0 40.8 28.6 71.5 27.5 38.0 +3.0 59.9 45.0 37.0 -12.5
.4747 .5011 .715 .410 .5063 .5368 .930 .719 .6685 .7183 3.213 4.132 .6753 .7255 3.282 4.245	59.9 45.0 37.0 -12.5 (1+2)
.5063 .5368 .930 .719 .6085 .7183 3,213 4,132 .6753 .7255 3,282 4,245 .9921 1.0140 4.001 5,332 1.1060 .2370 4,434 6.023	
.9921 1.0140 4.001 5.332 1.1060 .2370 4.434 6.023	36.0 -21.5 28.57 -30.3 33.33 -17.8 28.00 -34.0 32.5 -18.0 27.25 -41.0 29.9 -24.0 27.00 -44.0
.6753 .7255 3.282 4.245 .9921 1.0140 4.001 5.332 1.1060 .2370 4.434 6.023 .1620 .3080 4.505 .128 .5120 .7570 4.525 .152	29.9 -24.0 27.00 -44.0 (3+1) I
الله من الله الله الله الله الله الله الله الل	27.0 -38.8 24.0 -37.6
m ₁ m ₅ m ₁ m ₅	27.0 -38.8 24.0 -37.6 26.0 -37.5 22.75 -39.5 25.0 -37.0 22.50 -40.5
4.399 4.233 10.852 12.058 5.275 5.129 11.140 12.494 6.268 6.183 11.468 13.013 7.011 7.008 12.527 14.677 8.007 8.278 13.611 16.480 8.286 8.555 14.583 18.185 9.515 10.182 15.682 20.213	(3,5+1)
6.268 6.183 11.468 13.013 7.011 7.008 12.527 14.677	23.5 -43.0 20 -45.0 22.22 -41.4 19 -50.5
8.007 8.278 13.611 16.480 8.286 8.555 14.583 18.185	21.0 -42.3 (2.5+1)
9.515 10.182 15.682 20.213 9.978 10.813	
m ₁ - C10 ₄ H m ₂ - NaC1 m ₅ - H ₂ SO ₄	28.57 -29.8 26 -32.0 27.25 -30.0 25 -37.2 (3+1) II
	26.0 -44.5 24 -44.0 25.0 -43.2 22.5 -47.8 24.5 -43.5
Robinson and Stokes, 1949	2110 10,0
	mol% f.t. m.t. mol% f.t.
m osmotic coef. m osmotic coef.	mixed crystals II mixed crystals I
2 5°	17.5 -46.0 -51.8 24.45 -41.8
0.1 0.947 1.6 1.141 .2 .951 1.8 .175	17.5 -46.0 -51.8 24.45 -41.8 17.2 45.0 50.5 23.5 36.5 16.7 43.0 48.0 23.0 35.0
.3 .958 2.0 .210 .4 .966 2.5 .305	16.4 42.0 46.0 22.5 34.2 15.5 41.0 41.7 22.2 34.1
.5 .976 3.0 .406 .6 .988 3.5 .511	15.0 41.8 42.6 21.5 34.0 14.3 43.2 45.6 20.4 34.2 13.3 46.0 58.0 20.0 35.2
.7 1.000 4.0 .022 .8 .013 4.5 .738	13.3 46.0 58.0 20.0 35.2 13.0 47.5 57.5 19.1 37.7
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	17.5
1,4 ,106	L ^K mixed crystals I mol% f.t.anh.
	23.8 22.91 11.0 -54.0 21.8 21.46 9.0 34.5
	20.0 21.17 7.0 21.0 18.8 19.88 4.1 -10.0
	18.0 19.14 0.0 0

1100						
	đ	*	đ	*	d	<u>%</u>
Brickwedde, 1949			15	•		
# f.t.	0.999 1.005 .010 .015 .020 .025 .030 .035 .040 .045 .055 .060 .065 .075 .080 .085 .090 .095 .100 .115 .120 .125 .130 .135 .140 .145 .150 .155 .160 .165	0 1.00 1.90 2.77 3.61 4.43 5.25 6.88 7.68 8.48 9.28 10.06 10.83 11.58 12.33 13.83 14.56 16.72 17.45 18.16 18.16 19.26 20.26 20.26 21.64 22.32 22.32 24.30 24.30 24.39 25.57	1. 230 . 235 . 240 . 245 . 250 . 255 . 266 . 265 . 270 . 275 . 280 . 285 . 290 . 295 . 300 . 315 . 320 . 325 . 330 . 325 . 330 . 345 . 350 . 355 . 360 . 365 . 370 . 375 . 380 . 385 . 380 . 385 . 380 . 385 . 380 . 385 . 380 . 385 . 380 . 365 . 370 . 375 . 380 . 365 . 370 . 375 . 380 . 385 . 386 . 386 . 386 . 387 . 380 . 386	32.74 33.29 33.85 34.495 35.49 36.56 37.68 37.60 39.10 40.59 41.08 41.56 42.49 42.49 42.49 42.49 43.49 44.81 44.61 45.16 46.61 47.49 47.49 47.49	1.455 .460 .465 .470 .485 .490 .495 .505 .515 .520 .525 .535 .545 .550 .5560 .565 .575 .585 .590 .595 .600 .605	53,71 54,11 54,50 54,89 55,56 55,56 55,95 56,69 57,44 57,81 58,54 58,92 59,66 60,04 60,78 61,15 61,15 61,15 61,15 62,63 63,07 63,74 64,50 64,88 65,63 66,01 66,39
81.077619 84.817756 90.807690 94.67 1.8059 .7531 98.62 .7817 .7259 100.00 .7676 .7098	.170 .175 .180 .185 .190 .195 .200 .205 .210 .215 .220	25.57 26.20 26.82 27.44 28.05 28.66 29.26 29.86 30.45 31.61 32.18	.395 .400 .405 .410 .415 .425 .430 .435 .440 .445	48.80 49.23 49.68 50.51 50.91 51.31 51.71 52.11 52.31 53.31	.640 .645 .650 .655 .660	66.39 66.76 67.13 67.51 67.89 68.26 68.64 69.02 69.40 69.77 70.15
% d						
15° 30° 50°						
11.14 1.0670 - 1.0507	Linde,	1924				
35.63 .2569 1.2451 .2292 55.63 .4807 .4637 .4421	*	mol %	đ	%	mol 🐒	đ
69.81 .670867284	10.06 19.57 26.85 31.20 32.67 34.44 36.60 39.54 45.80 34.94 74.23	4.18 6.17 7.51 8.00 8.78 9.37 10.495 10.65 13.20	25° 1.055 118 172 209 223 242 258 283 289 352 50° 1.221 687	50.34 57.74 60.20 63.51 66.19 69.84 71.71 74.47 75.70 77.21	15.375 19.67 21.50 23.78 25.98 29.33 31.24 34.33 35.83 37.78 38.04 41.71	1.402 .493 .531 .573 .609 .664 .685 .720 .737 .757

Mazzucchelli and Pro, 1926		Pearce and Nelson, 1933
% d		m d m d
15° 25° 5.20 1.02976 1.02680 9.98 .05948 .05554 18.69 .11866 .11249 52.15 .43550 .42590		25° 0.00000 0.997071 3.1512 1.15220 .10016 1.00263 4.2734 .19970 .20064 .00834 5.4347 .24543 .40257 .01918 6.6372 .29023 .60655 .02998 7.8719 .33273 .81037 .04087 9.1723 .37386
Kohner and Grossmann, 1927		.81037 .04087 9.1723 .37386 1.01589 .05135 10.5132 .41380 2.0661 .10322 11.9050 .45283
wt% mol% d wt% mol%	d	
25°		Markham, 1941
25.2152 5.70 .16134 61.945 22.59	1.40379 .47113 .55268 .61406	% d % d 25° 30° 25° 30°
33,0229 8,12 .22540 66,422 26,17 44,9864 12,79 .34166 69,655 29,16	.65803	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
% d % d		12 .06862 - 40 .29073 1.28658 14 .08163 - 45 .34252 -
20° 0 0.99540 15.845 1.09290 5.2994 1.0259 30.691 .2053 12.265 1.0691 69.892 .6608		12 .06862 - 40 .29073 1.28658 14 .08163 - 45 .34252 - 16 .09498 - 50 .39937 1.39435 18 .10866 - 55 .46134 - 20 .12280 1.11999 60 .52766 1.52177 22 .13734 - 65 .59628 - 24 .15224 -
Hantzsch and Dürigen, 1929		Brickwedde, 1949
% d % d	,	% d (g/ml) +50° +25° 0° -25° -50°
20° 2.2130 1.00777 25.332 1.16227 3.9910 .02574 35.9449 .25246 7.6938 .04052 52.927 .43554 13.174 .07520 58.486 .50702 15.7425 .09261 69.370 .66052 Fajans and Grossmann, 1930		0 0.9881 0.9971 0.9999
mo1% d	,	60 .994 .5275 .5580 .6620 .6620 .70 .6344 .6644 .6987 .7306
0 0.99707 17.48 1.45013 24.86 .59346 29.03 .65724		

	<u> </u>								· · · · · · · · · · · · · · · · · · ·	
Clark and Putna	m, 1949			Bric	kwedde, l	949		·		
t 10% 20%	d 30% 40%	50% 60%		% 	+50°	+40°	+30°	η + 2 5°	+20°	+10°
50 1.041 1.10 40 .046 .11 30 .051 .11 20 .056 .12 10 .061 .13 0 .066 .13 -1014 -20305058	9 . 195 . 285 5 . 203 . 294 1 . 210 . 303 7 . 217 . 312 4 . 225 . 321 . 232 . 330 348 357 364	1.375 1.49 .385 .507 .395 .527 .405 .53 .415 .54 .425 .566 .435 .57 .445 .586 .455 .599 .465		0 5 10 15 20 25 30 35 40 45 50 55 60 65 70	547 557 569 586 610 641 684 744 822 940 1099 1329 1646 2076 2639	653 662 675 692 715 750 794 859 950 1080 1271 1548 1928 2440 3094	798 803 813 829 853 890 941 1013 1113 1274 1507 1837 2296 2913 3692	890 894 901 913 937 974 1031 1108 1224 1395 1650 2022 2532 3211 4060	1002 1004 1010 1022 1043 1080 1139 1223 1345 1534 1821 2237 2813 3560 4504	1306 1287 1280 1286 1307 1347 1413 1514 1670 1900 2268 2819 3560 4523 5675
van Wyk, 1906	surface tension	,		%				 η		
	_t_1)	t			0°	-10°	-20°	-30°	-40°	-50°
	r ^t =1) % 50°			0 5 10	1786 1743 1714	2590 2470 2400	-	-	-	-
22.7 1.05 38.3 1.29 48.8 1.69 58.3 2.51 65.1 3.41 71.5 4.67 76.3 6.21	1.13 80.5 1.42 84.1 1.86 91.1 2.72 91.3 3.64 94.9 4.39 95.3 6.36 100.0	- 8	.67	15 20 25 30 35 40 45 50	1714 1701 1707 1745 1815 1925 2113 2426 2914 3677	2347 2329 2353 2434 2572 2814 3244 3962	3415 3581 3928 4582 5732 7570	5887 7139 9084	11960 16220	-
Linde, 1924				60 65 70	4763 5969 7333		9962 12370 14190	11990 16250 19880 22190	34700	69400 90950 - -
wt %	mol %	η (water ^t =	1)	60%	-60°	រ	45000			
10.06 19.57 26.85 31.20 32.67	25° 1,96 4,18 6,17 7,51 8,00	1.01 1.04 1.07 1.13 1.15		Clai	k and Pu	tnam, 1	949			
34.44 36.60	8.78 9.37	$\frac{1.19}{1.23}$	1	ι	10%	20%	30%	40%	50%	60%
39.54 39.95 45.80 50.34 57.74 60.20 63.51 66.19 69.84 71.71 74.47 75.70 77.21	9.37 10.495 10.65 13.20 15.375 19.67 21.50 23.78 25.98 29.33 31.24 34.33 35.53 37.78 50° 8.78	1.31 1.33 1.53 1.80 2.42 2.75 3.16 3.59 4.24 4.78 5.54 6.00 6.50		50 40 30 20 10 0 -10 -20 -30 -40 -50 -58	560 666	610 721 867 1040 1357 1779 2355	700 815 959 1144 1451 1921 2555 3480	820 960 1142 1338 1681 2165 2880 4010 5900	1051 1260 1492 1782 2265 2770 3860 5500 8560 14000	1552 1855 2190 2730 3380 4290 6500 9750 17100
74.23 77.32 79.47	34.05 38.04 41.71	5.78 6.60 6.90								

	·																					
Wolf and	d Christo	ofzik, 195	5			Hantzs	ch and Dür	igen, 19	28													
М	η	М	η			%	n _D	%	n _D													
		5°					2	0°														
0.5 1.0 1.8 2.8	900 900 920 980	3.2 4.4 6.7	1000 1180 1500		ad augustus and and and and and and and and and and	0 5.299 12.265 15.845	1.33300 4 .33644 .34145 .34448	30.65 69.85 84.73 100	01 1,357 02 ,415 30 ,414 ,385	793 542 437 189 (50°)	المراجع والمراجع Neros an	d Everso	le, 1941				Hantzsch	and Dür	igen. 19	29		
8		σ					n _D															
	15°	25°	50°					20°														
0.00 4.86 10.01 20.38 30.36 40.37 53.74 60.70	73.51 72.52 71.66 70.46 69.82 69.72 70.33 70.88	71.97 71.18 70.34 69.21 68.57 68.49 69.02 69.69	68.16 67.66 66.97 66.12 65.66 65.74 66.66 67.46) 7 2 5 4 0		2.2130 3.9910 7.6938 13.1740 15.7425	1.33435 .33648 .338124 .34211 .34420	25.332 35.944 52.927 58.486	19 .30	53424 8698												
63.47 67.59 70.43 72.25	70.77 70.67 70.07 69.96	69.69 69.73 69.71 69.54 69.01	67.44 67.41 67.26 66.85	l		Fajan mol%	s and Gros	smann,	1930	ندائلة الله في الدائلة الدور بي الدوائلة												
			, 2.2.2				25°	U														
Mazzuco	helli an	d Pro, 192	86			0	25	1.332	: 0													
8		n _D				17.4 24.8		3878 4064	80													
	25°					29.0		.414	bŏ													
5.01 10.03 14.97		1.335 1.339 1.342	32 .8 38			Linde,	1924		المدائشية الدوليو من الدوليو عن الد	ه الدار الدور الد												
						wt%		x	wt%	mo1%	×											
							مراجع حدجه هیرنید هیرنی هیریب ه	25														
Kohner	and Gros	ssmann, 19	27			10.06	1,96	3610	50.34	15.375	6340											
wt%	mo1%	n _{He}	wt%	mo1%	n _{He}	19.57 26.85	4.18 6.17	5910 687 0	57.74 60.20 63.51	19.67 21.50 23.78	5070 4560											
15.5513 16.1457 25.2152 33.0229 44.9864	3.15 3.34 5.70 8.12 12.79	2 5°	00.422	15.44 18.49 22.59 26.17 29.16	1.38175 .39060 .40129 .40898 .41416	31.20 32.67 34.44 36.60 39.54 39.95 45.80	7.51 8.00 8.78 9.37 10.495 10.65 13.20	7280 7410 7537 7543 7480 7460 6980	66.19 69.84 71.72 74.47 75.70 77.21	25.98 29.33 31.24 34.33 35.83	4230 3780 3130 2740 2188 2024 1890											
manin gant sidet dies gade gate gate gant gant gant						34.94 74.23	8.78 34.05	9840 3420	77.32 79.47	38.04 41.71	3040 2970											
							ور بري حوال الله و الله الله الله الله الله الله															

Usanovich and Sumarokova, 1947	Berthelot, 1881
mo1%	mo1% U
20° 50° 60°	15-40°
17.3 5000 6618 7333 23.5 3666 5110 5775 29.0 2448 3964 4480 37.4 - 2705 3137 38.1 1566 2744 3051 41.8 - 2551 2903 42.3 - 2514 2818	0.08 0.993 1.07 .893 4.95 .6705 8.47 .575 13.90 .501
42.3 - 2514 2818 45.2 - 2540 2879 45.5 - 2550 2896	mol% t Q dil.
45.5 - 2550 2896 47.5 - 2508 2875 48.8 - 2484 2818	initial (for 0.08mol%)
41.8 - 2551 2903 42.3 - 2514 2818 45.2 - 2540 2879 45.5 - 2550 2896 47.5 - 2508 2875 48.8 - 2484 2818 51.3 - 2550 2876 52.7 - 2572 2960 53.6 - 2628 2950 54.3 - 2654 2973 63.0 - 2501 2826 67.0 - 2185 2596 71.8 - 2189 2627 77.5 1352 1824 2055 84.7 108 1330 1545 88.0 - 1130 - 100,0 91 106 199	0.25
mol% × mol% ×	
50°	
0.10 384 3.83 6112 0.15 579 4.50 6504 0.42 1400 5.43 6965 0.69 2100 5.83 7000 1.00 2700 6.48 7313 1.49 3527 7.62 7524 1.97 4085 10.10 7828 2.32 4611 10.10 782 2.76 5161 11.00 7653 3.27 5711 12.90 - 3.56 5736	Water + Periodic acid (I0 _և H) Gyani and Gyani, 1949
1.97 4085 10.10 7828 2.32 4611 10.10 -	% f.t. % f.t.
2.76 5161 11.00 7653 3.27 5711 12.90 - 3.56 5736 (1+1) (2+1)	65.60 0 66.94 35 66.15 20 67.08 37 66.30 25 67.61 40 66.79 33 68.02 45
Wolf and Christofzik, 1956	Thomsen, 1874
M × M ×	mo1% d mo1% d
25° 0.2 1600 9.5 4500 1.2 3200 11.4 3200	mo1% d mo1% d 0.0 0.9988 1.2 1.1121 0.3 1.0288 2.3 .2165 0.6 1.0570 4.3 .4008
1.4 4800 68 4400 2.2 6000 78 3200 3.2 7000 91 2300 4.6 7800 95 1200	
5.9 7000 97 800 7.3 6000 100 0 8.7 5000	Manchot, Jahrstorfer and Zepter, 1924
8.7 5000	% d
	25° 20.421 1.1740 47.023 1.4066

	Water + Nitrous anhydride (N_2O_3)
Water + Nitrous oxide ($ m N_2O$)	
Villard, 1897	Lowry and Lemere, 1936
t p dissoc. t p dissoc.	mol% f.t. sat.t. mol% f.t. sat.t.
(6+1) -9.1 3.6 +2.4 12.4 6.4 4.8 7.1 21.5 4.7 5.8 8.0 24.0 2.9 7.0 9.5 29.5 -1.3 8.4 10.7 34.7 0 9.7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Manchot, Jahrstorfer and Zepter, 1924 34.70 vol% f.t. = 25°	Water + Nitric anhydride ($N_2 O_5$) (see also the system: $H_2 O_5 + NO_3 H_1$)
	Lloyd and Wyatt, 1955
Water + Nitrogen tetroxide ($ m N_2O_4$)	K K V P L V P
	-10°
Lowry and Lemere, 1936	89.08 - 11.71 87.63 87.2 6.29 88.75 - 9.17 86.97 86.0 6.44
mol% f.t. ice I II sat.t.	(88,71) 93.7 (8.80) 86.50 85.5 6.71 88.05 89.6 6.76 85.81 - 6.90
0.9	87.63 87.5 6.30 0° 89.68 - 37.83 (88.58) 92.0 (16.2) (89.63) 97.6 (36.66) 88.64 - 17.2) 89.59 - 35.65 (88.58) 91.6 (16.2) 89.58 - 35.49 88.14 90.6 14.64 (89.52) 97.1 (33.44) 88.10 89.8 14.05 89.47 - 31.39 87.85 87.6 13.16 (89.26) 95.9 (26.40) 87.83 - 13.16 89.26 - 26.26 87.75 87.6 13.13 (89.24) 96.0 (25.90) 87.61 87.4 12.98 89.17 - 25.61 87.38 85.5 13.18 (89.12) 96.3 (24.43) 87.31 85.8 13.16 (89.12) 96.3 (24.43) 87.31 85.8 13.16 (89.90) 95.0 21.30 86.57 - 13.58 88.91 - 19.47 86.00 85.5 13.87 (88.89) 94.2 (19.30) 85.72 85.5 13.87 (88.89) 94.2 (19.30) 85.72 85.5 13.99 88.66 - (16.71) 10° 88.02 91.2 30.13 86.51 - 25.65 87.84 88.0 25.84 86.50 86.3 25.66 87.39 87.6 25.87 85.70 85.4 26.26 87.76 92.4 52.5 86.91 86.6 46.8 87.39 87.6 25.87 85.70 85.4 26.26 N.B. the figures in brackets represent mean values
	an blackets represent mean values

					····							
Ru	dorff,	1862						Niamia .	acid (HNO			
	 %		f,t.				Н		stem: Wat		ic anhyd	ride)
					شد حد ات هجمد من من سرمد من اس.		(See al	so the sy	Stem: nat	er + Miti	ic amyu	ruc,
11 .	2.43 6.91		-1.6 -5.25				Heteros	geneous e	quilibria			
1	9.07 0.79		-5.25 -7.3 -9.25									
			,, 2 0				Sanazhn	ikov, 190	4			
									<u>.</u>			
▮ .							[%]	p		<u>p</u>		
Rü	dorff,	1872	نے البر شیرانی فیل لیے کیونی ہ				/- no	_	5°	20.70		
	%		f.t.				78.10	1.90 9.40	88.65 92.93	29.70 42.60		
3	3.73		-2,50				82.10	16.64	98	42.20		
4	.63		-3,35									
9	.67 .17		-5.05 -7.55									
11	.38		-10.10				Klemen	e and Nag	el. 1926			
										N/150\		
Ni.	tric ac	rid (H	NO. 1 +	Nitric a	nhydride (NaOa N	N(15°)	P1		N(15°)	P1	P2
,,,	ciic ac	u (II)	1103 / T	11111C G	umyariae (יצטק /	1		12.	5°		
Be	rl and	Saenge	r, 1930				0.0 0.5	10.87 10.64	_	12.0 12.5	3.37 2.99	0.202 0.311
t				р			1.0	10.44 10.20	_	13.0	2.55	0.447 0.596
	85.93%	87.64%	88.81%	89.24%	89.67% 90.1	.0% 100%	1.5 2.0	10,20 9,99	0.0015 .0030	13.5 14.0	2.12 1.70	0.800
0.0	15.3	-	19.5	22.9	34.8 50.	0 14.0	2.5 3.0	9.70 9.43	.0045 .0075	14.5 15.0	$\frac{1.50}{1.22}$	1.000
$\frac{5.0}{10.0}$	15.3 21.7 28.4	24.2 31.8	26.2 36.8	34.3 47.4	49.8 72. 71.0 103.	0 19.6 8 26.5	3.5 4.0	9,15	.0101 .0128	15.5 16.0	0,91 0,60	1.56 2.02
15.0	38.3	41.4	51.8 73.0	67.2	102.0 157.	0 35.5	4.5	8.86 8.51	.0156	16.5	-	2.63 3.39
20.0 25.0	51.2 64.3	55.5 7 5.0	103.0	142.0	156.7 241. 226.0 323.	0 61.0	5.0 5.5	8.19 7.80	.0181 .0210	17.0 17.5	-	4.32
30.0 35.0	77.3 95.5	$99.8 \\ 138.0$	178.4 265.8	213.7	422.7 464. - 692.		6.0 6.5	7.50 7.12	.0236 .0264	$18.0 \\ 18.5$	- ,	5.41 6.60
	120.1	197.0	-	-	- "-	- :	7.0 7.5	6.80	.0296	19.0	_	7.88 9.30
p		*	p	*	p	*	8.0	6.50 6.16	.0330 .0362	$\frac{19.5}{20.0}$	-	10.80
				<u>~~~~</u>			8.5 9.0	5.80 5.49	.0391 .0423	20.5 21.0	-	12.35 14.06
15.	2 8	5.93	18.1	88.61	42.6	89.98	9.5 10.0	5.1 7	.0467	21.5 22.0 22.5	-	15.90 17.83
17.	1 83	7.44	18.5	88.81	50.0	90.10	10.5	4.88 4.51	.0526 .0627	22.5	-	19.73
17.	9 8	8.22	22.9	89.24 0°			$\begin{array}{c} 11.0 \\ 11.5 \end{array}$	4.13 3.73	.0841 .1260	23.0 23.5	-	21.63 23.61
21.	7 8	5.93	26.2	88.61	49.8	89.67		5476		24,0	-	25.69
24.	2 8	8.22	34.3	89.19	72.0	90.10	Į		30°			
			10		_		0 0.5	31.77	-	8.0	18.09	0.189
28. 29.		5.93 7.44	33.5 36.8	88.44 88.65	87.3 103.8	89.98 90.10	1.0	$\frac{31.30}{30.72}$		8.5 9.0	17.00 15.95	. 252 . 347
3í.		8. 22	71.0	89.68	-30,0	, , , , ,	$\frac{1.5}{2.0}$	30.11 29.42	0.0033 .0070	9.5 10.0	14.89 13.88	.482 .641
	_		15				2.0 2.5 3.0	28.61 27.78	.0119	10.5	12.91	.777
38. 39.	3 8	5.93 6.89	45.1 47.2	88.22 88.44	67.2 102.0	89 24 89 67	3.5	26.91	.0230	$\substack{11.0\\11.5}$	11.98 10.99	.921 1.08
41.	4 8	7.64	51 . 8	88.81	157.0	90.10	4.0 4.5	26.00 25.07	.0300 .0380	12.0	9.89 8.75	.26 .45
ļ ₅ ,	2 0	- 01	20		1		5.0 5.5 6.0	24.07 23.10	.0482	12.5 13.0 13.5	7.69	66
51. 55.	5 83	5.93 7.05	73.0 96.0	88.81 89.24	156.7 241.0	89 67 90 10	ě.Ď	22.17	.0750	14.0 14.5	6.63 5.50 4.21	2.21
64.		8.22	25				6.5 7.0	21.11 20.07	.0926 .115	15.0	2,95	2.21 2.62 3.28 4.60
64. 71.		5.93	79.8	88.22	226.0	89.68	7.5	19.05	. 145	15.5	1.55	4.60
75.		7.05 7.64	$\begin{smallmatrix}103.0\\142.0\end{smallmatrix}$	88.81 89.24	323.0	90.50						
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				-				
Danilov, Matvejev and Buch	galter, 1940	Poti	er, 1956	i				
mol% p mol%	b	8	mo1%	0°		p		
20°					5°	10°	15°	
71.7 24.0 93.4 75.4 27.2 95.4 81.3 31.2 96.6 86.9 34.8 99.9 91.5 38.6	40,25 41,70 43,90 45,00	0.00 10.48 16.14 24.16 32.80 40.00 45.60	0.00 3.12 5.28 8.34 12.16 15.94 19.36 25.74 31.00	4.579 4.345 4.121 3.724 3.177 2.748 2.449	6.543 6.026 5.875 5.346 4.667 3.926 3.492	9.209 8.66 8.28 7.516 6.531 5.559 4.932	12.79 11.91 11.50 10.59 9.068 7.745 6.823	17,53 16.52 15.82 14.59 12.62 10.74 9.376
Vandoni and Laudy, 1952		54.84 61.12 66.86 70.36 73.72 75.73 79.70 82.68	36.28 40.20 44.18 47.15	1.683 1.311 1.143 1.245 1.611 1.871	2.400 1.910 1.671 1.866 2.317 2.735 3.828 5.105	5.559 4.932 3.389 2.778 2.472 2.686 3.266 3.864 5.433	4.475 3.908 3.508 3.837 4.560 5.420 7.603	6.562 5.470 5.058 5.433 6.314 7.482 10.59
mol % p	P ₁	82.68 87.70	58.04 67.86	3.532 6.472	5.105 8.974	7.245 12.25	10 21	14.16
20° 1.5 1.638 1.56 1.60 3.0 16.10 3.0 16.15 3.0 16.08 3.2 15.40 4.0 16.15 4.0 15.8 4.0 4.65 14.9 4.67 14.8 6.79 14.4	15.73	87.70 89.54 90.20 91.98 92.84 95.46 96.13 97.11 98.13 99.12 99.72	52.72 58.04 67.86 71.80 73.00 77.10 79.90 85.73 87.65 90.56 93.71 97.02 99.03 100.00	7.745 7.98 9.009 10.00 11.72 12.13 12.56 13.55 13.84 14.03 14.15	10.72 11.12 12.59 13.83 16.03 16.63 17.54 18.54 19.10 19.41 19.80	3.864 5.433 7.245 12.25 14.42 15.07 17.16 18.84 21.83 22.60 23.71 25.01 25.01 26.30 26.55	16,60 19,72 20,18 23,17 25,18 29,04 30,13 31,55 33,57 34,53 35,24 35,50	22.13 26.42 26.92 31.19 33.65 38.82 40.18 42.07 44.88 46.14 46.99 47.40
7.06 14.2	14.1	mo1%	p ₂	 1) ₁	P ₂	P1	
9.78 - 9.82 12.50	12.89			 20°	·			
Lloyd and Wyatt, 1955		0 5 10 15 20	0 0 0 0.0 0.1 0.3	17. 15. 13. 38 11. 3 8.	.53 .78 .66 .302 .84	0 0 0 0 0	4.58 4.18 3.52 2.90 2.238 1.658	
% p -10° 0°	10° 20°	30 32	0,9	77 4.	539 803 18	0.066 0.156 0.216 0.387	1.166 0.994	
72.4 1.10 2.02 77.7 1.31 2.77 83.3 2.26 4.67 87.1 3.40 6.56 91.8 4.83 9.82 96.3 6.30 12.64 99.8 6.97 14.02	3.69 6.46 5.52 10.45 8.89 16.41 12.54 22.09 18.06 32.09 23.35 41.47 26.42 46.96	25 32 35 45 50 50 65 70 75 80 85 90 95 100	1.0 1.7 2.9 7.7 11.0 15.0 19.1 24.0 29.1 33.1 41.9 45.1	9 0. 3 0. 0 0 0 0 5 0 5 0	216 35 63 12 76 55 43 27	0.387 0.700 1.336 1.94 2.915 4.13 5.62 7.08 8.57 10.00 11.46 12.62 13.67 14.15	0.713 0.530 0.34 0.22 0.145 0.09 0 0 0	
				======				

Küster and Kremann, 1904	
69.9 80.2 408 104 L V L V 69.5 80.0 458 108	
L V L V 69.5 80.0 458 108 69.9 77.2 570 113.5 70,1 81.0 754 121	
61.76 47.0 70.63 86.5 74.72 94.80 40 47.6 63.64 54.0 75.74 93.4 74.52 90.77 116 67.0 65.39 62.9 77.78 94.0 75.52 89.57 325 93.0 66.11 66.0 74.62 86.56 408 100.0 74.02 94.56 540 110.0 75.12 91.50 760 118.0	
79.81 97.78 40 43 81.71 97.60 116 56 81.71 97.98 458 91 Pascal and Garnier, 1921 80.70 96.58 570 98	·
Pascal and Garnier, 1921 80.70 96.58 570 98 79.73 96.70 760 112 80.40 95.60 870 120.5	
L V 84,45 98,35 40 38 84,45 98,75 116 52,5 84,45 98,45 345 78 84,45 98,45 345 78 84,45 98,65 458 84 84,65 98,15 570 92 24,6 1,80 465 93 84,65 97,45 760 99 24,0 2,20 566 100 24,2 2,16 760 106,5 89,52 99,84 40 32,5 25,2 1,60 870 115,5 90,05 92,25 116 47,5	
50.5 21.2 458 105.5 97.62 99.47 40 27.5 49.8 16.0 570 111.0 97.50 99.33 116 41.5 41.5 67.64 90.47 315 50.0	
50.2 15.2 870 124.2 77.07 37.7 313 37.0 61.0 50.02 40 52	
61.0 50.02 40 52 60.65 42.0 116 70.2 p b.t. p b.t. 61.0 45.0 317 98.5	راسد الند الن من عبد سوالت الد ميدم
61.2 50.2 353 104 100% 60.28 50.4 463 109.5	
60.85 50.5 517 112.5 23 20 200 50 61.2 51.0 553 113.5 38 26 350 62 61.2 50.1 622 115.5 50 29 530 74 60.95 50.02 670 117.5 112 40 540 75	
61.0 45.2 725 120.5 61.0 41.0 763 121.6 64.96 55 40 52.6 66.20 65.9 116 72.0 66.4 66.4 116 72.1 64.0 50.0 324 102 67.6 66.9 458 109 65.6 64.95 465 110.1 68.2 68.90 574 113.9	
68.2 68.90 574 113.9 68.4 68.4 760.2 121.9 64.5 58.9 870 126.0 66.62 65.1 870 126.3 65.19 65.1 1010 130.6	
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Sproesser and Taylor, 1921	L	Carpente	er and Bal	bor, 1924		
% b.t.	· p	%		9	8	
L V		L	v	L	V	:
21,25 0 0	3.8		at l	b.t.		
20.65 0.21 35 " .13 50	36.8 79.9	5.00	0.048	52.5	31.1	
" .19 65 .42 80	155.6	10.00 12.50	.200 .35	55.0 5 7. 5	$35.5 \\ 41.7$	
40.82 2.02 0	2.5	15.00 17.50	.55 .75	60.0 62.5	47.8 54.6	
" 3.81 50	55,6	1 20.0	$\frac{1.05}{1.45}$	65.0 67.5	60.8 66.8	
" 6.40 80	117.6 224.2	22.5 25.0 27.5	2.20 3.00	68.0 70.0	68.0 73.22	
56.26 22.49 0 56.16 33.12 35	17.0	1 30 0	4.10	74.0 78.0	82.14 88.89	
N " 33.87 50	39.4 9 84.6	32.5 35.0 37.5	5.60 7.30	80,0	91.34 95.10	
" 33.69 64. " 34.39 80 68.64 81.03 0	182.5	1 40.0	9.40 12.00	84.0 88.0	97.69	
68.42 69.15 35.	3 15.9	42.5 45.0	14.90 18.00	90.0 92.0 100.0	98.53 99,00	
1 " 68.76 74	118.3	47.5 50.0	22.20 26.50	100.0	100,00	
1 79.07 94.87 0	2.7	30.0				
80.23 88.56 35 89.03 52	5 0. 3					
11 00 40 65	90.0					
88.24 97.75 0	7.8 .8 69.7					
93.63 98.27 35 96.55 50	136.2	Wilson	and Mile:	s, 1940		
ر الله المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع - المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المواقع المو	نید. این افتد است همیانی بیده شدن این بیشنانی شهرسید اقتیانی بیش بیش بیشن بیش بیش بیش بیش بیش بیش بیش بیش بیش این افتداد شدن این امیده شهرست شان افتیانی این بیش بیش با بیش این بیش این بیش این بازی بیش این بیش بیش بیش بیش	8		p	P1	P ₂
ĺ		L	v	•	• •	. ~
1		49.80	13.88	8 1 20°	7.75	0.355
		60,00	40.70 40.91	8.1 7.7	4.85	0.95
Berl and Samtleben, 1922	tion around the architecture and architecture are around an extension and an around a security are assumed.	69.64	77.76	5.8 5.8	2.90	2.90
% b.t.	% b.t.	69.80	77.54	5.8 5.95 8.82 11.50 10.81 13.60 13.90 19.05 26.20 29.55 30.30 36.32 41.70	2.92	2.88
L V	L V	76.62 78.80	92.48 94.59	$\frac{8.82}{11.50}$	1.95 .92	6.87 9.58 9.79
10.45 0.46 102.5 20.58 1.26 104.5	69.44 71.12 120.8	79.60 81.60	97.10 97.51	10.81 13.60	.02 .11	12.49
ll 31.75 4.94 108.5	69.44 71.12 120.8 70.10 72.56 120.7 73.26 79.63 119.5 78.92 88.54 115.4	82.02 86.13	98.36 98.90	13.90	0.77 .71	13.13 18.34
	78.92 88.54 115.4	89.85 91.45	99.45	26.20	.50	25.70 29.11
77.77 21.71 115.2 53.96 33.51 117.5 56.60 39.37 118.6 61.47 51.34 120.1	82.20 92.87 111.1 84.36 95.72 107.0 88.66 97.16 101.1 90.02 97.34 99.0 90.27 97.68 98.5 93.93 98.52 91.4	91.81	99.66 99.65	30.30	.35 .37	29.94 36.08
56.60 39.37 118.6 61.47 51.34 120.1	88.66 97.16 101.1 90.02 97.34 99.0 90.27 97.68 98.5	94.49 96.58	99.81 99.92 99.75	$\frac{36.32}{41.70}$.24 .11	41.59
II 02.04 54.40 120.4	90.02 97.34 99.0 90.27 97.68 98.5	97.43 99.78	99 .7 5	47.80	-	~
65.18 60.62 120.5 65.67 62.11 120.8	9/.44 99.0/ 00.0	99,80 99,90	-	47.80 47.90	-	~
67.43 65.97 120.8 67.89 67.84 120.8	99.04 99.24 84.0 99.23 99.12 83.8					
68,00 68,00 121.0						
	مراموست القوائد الأمر من حي برنامي موسان الموسان الدوائية الدوائية الموسان مدينته ماييان الموسان الدوائية الم قد الدوائية الأدائية الدوائية الدوائية الدوائية الدوائية الدوائية الدوائية الدوائية الدوائية الدوائية الدوائية					
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Potier, 1951	Robinson and Stokes, 1949
% b.t. % b.t. L V	m osmotic m osmotic coefficient coefficient
19.6 1.2 104 81.5 95.5 111.5 30.0 7.4 109.5 83.3 97.4 108 43.4 13.6 112 84.3 97.4 106 51.8 28.6 115.3 86.6 98.4 102 60.0 45.1 118 89.1 98.9 97.5 64.0 56.7 119 89.9 99.55 95.8 68.0 68.0 120 90.57 99.6 95.5 74.1 81.9 118.5 91.5 99.5 92 75.9 86.7 117 93.4 99.52 91 78.8 91.8 115 95.3 96.19 99.55 87.2 78.8 91.8 115 96.19 99.65 86.9 79.8 91.9 113 99.45 99.9 82.8	25° 0.1 0.940 1.0 0.979 .2 .935 .2 .994 .3 .936 .4 1.009 .4 .940 .6 .025 .5 .944 .8 .042 .6 .950 2.0 .060 .7 .957 2.5 .106 .8 .964 3.0 .154
	Creighton and Githens, 1915
Vandoni and Laudy, 1952	% b.t. % b.t.
ورسان وربان	760 mm 360 mm
The second color of the	19.37 103.56 20.30 84.7 30.43 108.08 32.05 87.2 41.38 112.59 42.75 91.1 51.63 116.85 53.14 95.4 56.01 118.88 54.67 95.8 59.77 120.06 57.72 97.2 63.89 121.27 61.26 98.7 65.17 121.66 67.25 100.0 67.74 121.67 68.46 99.8 68.18 121.79 68.91 99.9 69.24 121.80 69.61 99.9 71.10 121.60 74.39 99.6 73.56 120.75 76.92 97.4 80.50 115.45 80.21 94.0 85.51 108.12 84.41 89.1 90.06 102.03 91.31 79.5 95.45 95.42 99.79 63.4 250 mm 110 mm 19.51 74.5 23.61 57.5 30.02 76.66 34.54 60.7 45.42 82 40.44 63.6 56.91 86.4 51.74 68.3 65.34 89.4 54.42 69.4 67.91 89.9 60.21 71.6 68.72 89.9 66.78 74.3 71.24 89.6 68.32 73.9 79.50 83.1 68.53 73.6 87.93 70.4 69.42 73.8 90.04 69.5 73.12 73.1 95.76 59.1 80.61 66.8 99.79 53.5 87.62 56.5
Mc Kay, 1956 (fig.) m a m a	99.75 35.6
m a m a 25°	66.18 121.70 760
0 1 4 1,2 0.5 0.7 5 1.4 1 0.7 6 1.8 1.7 0.78 7 2.2 2 0.8 7.8 2.7 3 1 6.7 3 a= activity coefficient	67.15 99.9 360 66.80 74.2 110

Freezing curve .	
Jones and Getman, 1902, 1903 and 1904	Johnston, 1906
M f.t. M f.t.	% f.t. % f.t.
0.25 -0.875 2.0 -8.347 0.50 -1.822 2.5 -11.046 1.0 -3.796 3.0 -13.908 1.5 -5.938	1.43 -0.98 17.62 -30.28 3.08 -1.86 29.23 -57.85 5.08 -4.50 40.05 -71.50 10.55 -11.00 49.70 -52.00
Kuster and Kremann, 1904	Abel, Redlich and Leugyel, 1929
8 f.t. 8 f.t.	m f.t. m f.t.
2.4 -1.3 59.8 -22.1 6.4 3.8 61.8 23.8 14.0 10.3 63.6 26.6 17.3 13.0 64.7 28.6 19.6 15.7 68.0 35.4 22.8 20.6 70.5 42.0 29.7 35.0 71.0 40.5 27.0 27.1 70.5 42.0 70.5 42.0 70.5 42.0 70.5 42.0 70.5 42.0 70.5 42.0 70.5 42.0 70.5 70.5 70.5 70.5 70.5 70.5 70.5 70	0.00526 - 0.0194
56.7 19.0 94.9 49.7 56.9 19.0 97.2 44.4 57.2 -19.0 98.5 42.7 98.8 42.3	J and A Potier, 1956 (fig.) mol% f.t. E tr.t. f.t. II
Jones, 1904, Jones and Bassett, 1905 M f.t. M f.t.	100

Properties of phases.				· · · · · · · · · · · · · · · · · · ·		
Trope tres of plases.	Kolb,	1866, 186	7 and 187	2		
Density .	8	d		%		d
		0°	15°		0°	15°
Ure, 1818	100.00 99.84 99.72	1,559 .559	1.530 .530	58.88 58.00	1.387 .382	1.368 .363
8 d 8 d	99.52 97.89	.558 .557 .551	.530 .529 .523	57.00 56.10	.376 .371	.358 .353
15.55°	97.00 96.00	.548 .544	.520 .516	55.00 54.00 53.81	.365 .359	.346 .341
0 0.999 50 1.314 10 1.059 60 .369	95.27 94.00	.542 .537	.514 .509	53.00 52.33	.358 .353	.339 .335 .331
15 .088 70 .419 20 .119 80 .459	93.01 92.00 91.00	.533 .529	.506 .503	50.99 49.97	.353 .349 .341 .334 .328	.323 .317
30 .184 90 .490 40 .251	90.00	.526 .522	.499 .495	49.00	.328	.312 .304
	89.56 88.00	.522 .521 .514 .513	.494 .488	48.00 47.18 46.64	.315	.298 .295
V 10/1	87.45 86.17 85.00	.503	.486 .482 .476	45.00 43.53 42.00 41.00	.321 .315 .312 .300 .291	.284 .274 .264
t d19.5	84.00 83.00 82.00	.499 .495 .492	.474 .470 .467	41.00 40.00	.267	.257
0 1.07388 1.13586 1.19047 1.24322 19.5 .06680 .12500 .17650 .22640	80.96 80.00 79.00	.488 .484 .481	.467 .463 .460 .456	40.00 39.00 37.95 36.00	.260 .253 .240	.244 .237 .225
40 .05711 .11229 .16091 .20792	77.66 76.00	.476 .469	.451 .445	36.00 35.00 33.86 32.00 31.00	.234 .226 .214 .207 .200	.218
60 .04590 .09864 .14476 .18901 80 .03304 .08377 .12752 .16794	75.00 74.01	.465 .462 .457	.442	$31.00 \\ 30.00$.207	. 198 . 192 . 185
100 ,01902 .06788 .10921 .14818	73.00 72.39	.457 .455 .450	.435 .432	30.00 29.00 28.00	.194 .187 .180	.179
0 1.27519 1.32578 1.37473 1.40672 19.5 .25640 .30310 .35000 .38020	71.24 69.96 69.20	.450 .444 .441 .435	.429 .423 .419	27.00 25.71 23.00	.180 .171 .153	.166 .157 .138
40 .23616 .27971 .32356 .35181 60 .21540 .25617 .29710 .32354	68.00 67.00	.430	.414 .410	20.00 17.47 15.00	.132 .115	.120 .105
60 .21540 .25617 .29710 .32354 80 .19371 .23164 .26968 .29434 100 .17112 .20622 .24155 .26445	66.00 65.07	.425 .420	.405 .400	10.00	.099	.089
	64.00 63.59	.415 .413 .404	.395 .393	11.41 7.72 4.00 2.00 0.00	.075 ,050	.067 .045
	62.00 61.21 60.00	.400 .393 .391	.386 .381	2.00	.026 .013 .000	.022 .010
van der Willigen, 1869	59.59	391	.374 .372	0.00	.000	0.999
,						======
50.48 % 18.75° d = 1.35946	}					
	Kohlrau	sch and G	rotrian,	18 7 5		
	- K	ď	8	d		
Thomsen, 1871		1	8°			
mol% d mol% d	6.2 12.4	1.0346 .0717	37.2 43.4	1,2372 ,2786		
18°	18.6 29.8 31.0	.1105 .1525	49.6 55.8 62.0	.3190 .3560		
0 0,9986 2 1,0360 0.5 1,0094 4.8 .0851 1 1,0185 9 .1542	31.0	.1946	62.0	.3871		
1 1,0165 y .1542						=======

Hager, 1876		Squires, 1891
% d % d		8 d 8 d
17.5°		15°
0 0.999 58.3 1.359 11.7 1.067 70.0 .415 17.5 .103 81.7 .463 23.3 .139 93.3 .498 35.0 .215 99.2 .512 46.7 .291		1 1.00581 26 1.15869 2 .01136 27 .16660 3 .01713 28 .17371 4 .02286 29 .18073 5 .02851 30 .18830 6 .03439 31 .19552
Grotrian, 1877		9 .05234 34 .21300 10 .05746 35 .22013 11 .06330 36 .22675 12 .06951 37 .23347 13 .07581 38 .23980
% t d t d t	<u>d</u>	H 14 08126 30 .24510
6.03 9.45 1.0335 20.82 1.0312 29.2 12.80 9.62 .0741 20.41 .0701 30.0 19.59 8.46 .1175 19.71 .1121 30.0 25.93 7.94 .1606 19.15 .1537 27.6 32.93 10.34 .2051 18.36 .1993 30.0 38.83 9.37 .2460 18.88 .2777 29.7	1 1889	16 .09500 41 .25850 17 .10102 42 .26475 18 .10725 43 .27125 19 .11321 44 .27785 20 .12024 45 .28450 21 .12714 46 .29110 22 .13349 47 .29780 23 .13890 48 .30443
		24 .14460 49 .31101 25 .15164 50 .31722
Le Blanc, 1889		
% d		
20°		Perkin , 1893
0 0.99823 14.09 1.07810		% d % d
14.09 1.07810 28.66 .17217 40.52 .25067 69.18 .41196		15° 0 0.9991 32.36 1.2000 22.54 1.1349 57.44 .3541 26.81 1.1655 99.45 .5178
	er and an and are are and good over up, and pure	yy, 45 ,51/8
Lunge and Rey, 1891		
% d Dv.10 ⁵ % d	Dv. 105	Le Blanc and Rohland, 1896
15°		g d
0. 0.99913 - 56.60 1.354 1.06 1.00508 14 60.37 .375 5.35 .02900 23 64.27 .399 9.85 .05536 32 68.15 .417 13.94 .07984 41 72.86 .432 18.16 .10647 47 74.79 .444 23.71 .14252 58 79.76 .455 26.52 .16090 64 83.55 .47 31.68 .19528 73 87.93 .48 34.71 .21693 79 91.56 .49 39.37 .24700 85 95.90 .50 48.34 .27370 92 97.76 .506 48.38 .30571 103 98.86 .515 52.35 .32985 110 99.70 .526	336 127 111 134 171 138 1774 141 141 145 1229 146 1220 145 168 150 1691 155 171 165 1877 165	20° 0 0.9982 8.04 1.0425 24.40 1.1434 37.78 1.2318 70.80 1.3983
		· ·

Veley and Manley, 1903	Winteler, 1905
% d	% d % d
4° 14.2° 24.2°	15°
78,22 1,47129 1,45504 1,43964 79,1446011 .44372 79,59 1,47496 81,97 .48391 1,46680 1,45092 84,90 .49495 85,21 .49581	86.3 1.485 93.6 1.505 88.2 .490 95.6 .510 90.2 .495 97.3 .515 91.8 .500 99.7 .520
85.80 - 1.47826 1.46224 87.55 1.50211 - 1.48491 1.46891 89.73 1.50898 49125	Ferguson, 1905
II 92 34 - 51804 - 49968 - 1.48264	The state of the s
94.04 .51949 .50149 .48516 95.62 .52192 .50358 .48677 96.64 .52510 .50632 .48887	
96.64 .52510 .50632 .48887 97.33 .50911 .49137 98.07 1.53212 .51298 .49543 99.97 1.54212 .52236 .50394	15.6° 0 0.9991 77.15 1.4493 14.49 1.0834 78.79 .4550 18.45 .1085 82.89 .4693 27.15 .1649 88.32 .4858 33.80 .2098 91.40 .4936 41.79 .2631 91.91 .4948
Kuster and Kremann, 1904	41,79 .2631 91,91 .4948 49,69 .3132 94,58 .5000 60.45 .3747 95.64 .5023 74,82 .4391 95.80 .5030
% d % d	76.57 .4457
15°	
0 1,000 65.0 1.398 10.0 .056 70.0 .421 20.0 .118 75.0 .441 30.0 .184 77.0 .449 40.0 252 70.0	Cheneveau, 1907 8 d % d
0 1.000 65.0 1.398 10.0 .056 70.0 .421 20.0 .118 75.0 .441 30.0 .184 77.0 .449 40.0 .252 79.0 .457 45.0 .283 82.0 .467 50.0 .316 85.0 .477 54.0 .341 89.4 .490 56.0 .378 98.5 .512	18° 0 0,9986 14.83 1.0837 5.21 1.0280 19.27 .1113 10.15 .0560 23.51 .1389 12.52 .0699
Sapozhnikov, 1904	Paking in the 1991
% d % d	Rabinowitsch, 1921
15°	% d % d
65,30 1,400 88,65 1,487 78,10 ,453 92,93 ,497 82,10 ,462 98 ,510	18° 62.0 1.3871 24.8 1.1525 55.8 .3560 18.6 .1105 49.6 .3190 12.4 .0717 43.4 .2786 6.2 .0346 37.2 .2372 0.0 0.9
Zecchini, 1905	37.2 .2372 0.0 0.9 31.0 .1946
% t d % t d	
0 20 0.99823 12.0130 22.2 1.06442 2.8152 21.5 1.01325 47.0966 19.1 .29008 5.5283 21.6 .02819 47.1436 20.0 .28908 5.5270 21.2 .02827 99.3114 23.7 .51325 12.2621 22.2 .06442	

Bingham and Stone, 1923	Hantzsch and Durigen, 1928
% d % d	wt% mol% d wt% mol% d
10° 20° 10° 20°	20°
12.66 1.0739 1.0698 69.84 1.4275 1.4131 25.28 1.555 1.492 77.25 .4612 .4451 38.01 2.427 2.337 88.32 .4958 .4793 52.10 .3339 .3222 99.24 .5306 .5108	2.2793 0.7 1.00653 11.329 3.5 1.0575 3.083001085 18.930 6.2 .1047 3.375201236 25.980 9.1 .1489 3.387001254 41.150 16.7 .2483 3.738801436 64.820 34.5 .3843
% d % d	3,7447 1.1 01451 69,333 39,2 41092 4.1960 1.2 01696 79,829 53,1 .44221
40°	4.7623 1.4 .02010
12,65 1.0603 62,66 1,3480 25,18 1,1355 69,86 ,3835 52,13 1,2982 88,34 ,4468	Lühdemann, 1935
	mol% d mol% d
Carstens, 1924	25°
% d π % d π	0 0.99707 31.708 1.36918
20° 0 0.9982 49.1 42.06 1.2679 39.4 4.21 1.0209 48.2 45.82 .2890 39.0 8.84 .0455 47.2 54.74 .3482 39.6 17.73 .1018 44.7 63.29 .3942 41.1 31.74 .1974 40.9	0 0,99707 31,708 1,36918 1,36918 1,36918 38,223 39918 4,187 0,7114 44,976 4,2207 6,832 11504 52,831 4,4250 9,542 15676 65,216 4,6528 14,661 22368 79,709 4,8101 19,761 2,8147 99,885 .50269 25,607 .33073
	Tollert, 1939
Manchot, Jahrstorfer and Zepter, 1924	N d N d
8 d	20°
25° 6.932 1.0351 14.242 .0731 22,938 .1191	0.00574 0.998343 0.579 1.01762 .0115 .998547 1.450 .04673 .0200 .999030 2.900 .09433 .116 1.002118 5.806 .18555
Decker, 1926	Guillaume, 1946
g d	8 d 8 d
18.3°	20°
6.5 1.035 31.7 .195 52.0 .321	4.72 1.0259 17.84 1.1035 7.81 .0436 20.99 .1227 10.00 .0563 27.80 .1674 12.67 .0721 39.28 .2437 15.94 .0915

Chanukvadze, 1947	Mikhailov and Shutilov, 1956 (fig.)
% d 0° 10° 20° 30°	π 20° 30° 40° 60° 80°
7.82 1.069 1.064 1.059 1.053 10.52 .066 .062 .057 .052 15.29 .100 .093 .086 .073 18.79 .138 .130 .121 .113 22.99 .169 .162 .155 .149 25.49 .172 .166 .159 .152 27.70 .199 .192 .184 .177	0 45.5 44 43 42.5 42.2 14.5 41.5 40.8 40.2 40.2 41.5 30 35.5 36.5 37 38 40 45 32 33.2 34.1 36.5 39.4 61.0 31 32.2 34 37 41.8
33.87	Schmidt, 1859
53.86 .388 .380 .371 .363 57.50 .354 .332 .328 .317	8 t π % t π
64.03 .392 .387 .382 .374 72.30 .425 .416 .400 .395 79.09 .436 .418 .400 .396 83.52 .439 .426 .420 .404	9.3 16.1 44.8 48.3 14.5 31.8 13.6 15.3 41.7 48.3 14.6 31.6 13.6 15.9 42.7 65.3 14.7 27.7 19.7 16.2 41.1 65.3 16 29.1
90.18 .468 .450 .436 .421 99.50 .544 .528 .508 .493	Viscosity and surface tension .
Potier, 1956	Grotrian, 1877
% d % d	% п
15°	10° 20° 30°
100 1.5241 98.52 1.5122 99.81 .5216 98.38 .5112 99.67 .5200 98.13 .5100 99.66 .5199 97.86 .5089 99.43 .5176 97.36 .5075 99.07 .5152 95.91 .5038 98.74 .5129	0 1305 1005 802 6.03 1309 1042 840 12.80 1411 1072 880 19.59 1480 1124 950 25.93 1581 1275 1103 32.93 1719 1351 1158 38.83 1929 1550 1314
Küster and Kremann, 1904	Wagner, 1883
% Dv . 10 ³	% η (water°=1) 15° 25° 35° 45°
15-30° 0-15° -15-0° 25.0 8.3 7.5 6.8 35.0 9.2 8.6 8.4	8.37 0.6641 0.5483 0.4538 0.3759 18.20 .6955 .5729 .4795 .4068 28.31 .8035 .6547 .5495 ,4625
45.0 11.6 11.1 10.6	Pagliani and Oddone, 1886
70.0 15.3 14.4 14.6 75.0 15.6, 15.0 14.0	% п % п 0° 10° 0° 10°
77,77 15.3 14.9 13.3 80.0 15.7 15.0 14.2 89.4 16.1 15.4 14.9	0 1775 1309 66,60 3475 2584 53.87 2945 2324 67.82 3422 2579 58.10 3295 2470 71,24 3288 2465 61.56 3459 2604 72.85 3276 2456 64.30 3560 2676 100.00 2275 1770

Küstei	and Kremann	1904			Molos	and Pere	z-Vitoris	1032		
		0°=1) %	n /H	20 at 0°=1)	#OTES		r=1)		water=1)	
,,	+15° ~		•	-15°		n (wate.	25°		water-1)	
0.0	0,667	- 45 0	1 200	3.304		1 00			2012	
10.0		- 65.0 - 70.0	1.300 .277	3.268	20.23 28.00	1.03 .10 .18 .29	75 50 00 51	0.71 1 3.60 5.30	.3812 .4572 .4625	
20.0 30.0	.716 1.	49E 77 A	. 205 . 165	2.767 2.664	35.28 43.32	.18 .29	75 68 3 7	5.30	.4625	I
40.0 45.0	1.051 2.	986 79.0 209 82.0 369 85.0 803 89.4	.036	2.503 2.240	======					
50.0 54.0	.144 .223	803 89.4	0.948 .797	1.955 1.487						
56.0 60.0	.223 .250 .284 3	915 95.6 179 98.5	.165 .119 .036 0.948 .797 .594	0.928 0.833	Tolle	rt, 1939				
		میرمی میرمی می ضوعیونت، نت ان ان است				η		 η		
							20°			و النبية المن النبية النبية على على على على النبية
		- 1000			0.00574			1014	.3	
	ham and Stone				01150 02000	1004.7	0.579 1.450 2.900	1032 1094	. 7	
8	η 10° 20°		η 10°	20°	.11600	1006.4	2,900 5,806	1317	.1	
					======		·			
12.63 12.66	1329 105 1329 105	2 69 80	2611	2043 2039						
25.29 25.28	1329 105 1498 105 1500 121 1843 121	69.84 0 77.23 0 77.25 9 88.36	2609 2489.5	1962.6 1952.4	Chanu	kvadze,	194 7 			
I 38.01	1842 150	ю хх зь	2487 1791 8 1789 8	1451 1451.9	%			η		
38.07 52.19 52,10	2390 150 2390 188	32 99.13	1789.8 1070.9 1069.7	913.3 913.3			10°		30°	40°
62.60	2644 188	33 99.24	1069.7		7.82 10.52	1620 -	1350 1380	$\frac{1170}{1250}$	870 870	750 749
8	n	% ,			11 15 20	$\frac{1680}{1770}$	1380 1420	1210 1190	880 977	760 783
		<u>%</u> η			18.79 22.99 25.49 27.70	1940 1970	1520 1540	1240 1240	1020 1040	885 900
12.65	724.1	69,86 13	56		27.70 33.87	2080 2270	1630 1730	1316 1370	$\frac{1080}{1140}$	940 990
25.28 38.05	724.1 848.3 1033 1286	77.24 13 88.34 10	12		35.46 41.30	2340 2520	1800 1950	1480	1250 1270	1080
52.13 62.66	1286 1369	88.34 10: 99.19 6	98.3		49.73	3070 3220	2300 2380	1540 1690 1940	1540 1660	1205 1290
					53.86 57.50	3280	2470 2490	1950 2030	1620 1640	1305 1340
	سه شه شه سوات میه شو شو ک				61.10 64.03	3260 3180	2480	2004 2010	1650 1630	1280
Rhodes	and Hodge	1929 (fig.)			72.30 79.09	3050 2810	2880 2520	1630 1450	1370 1160	1270 1140
g					83.52 90.18	2580 2170 1180	2030 1730	1380 836	1060	1000 947
,	0°	η 25° 50)° 5	75°	99.50	1180	947	030	753	684
0										
10 20	1700	850 55 900 65	0 45	50						
30 40	2100	1050 70 1200 80	0 60	00	Forch,	1899				
50 60	3000	1400 90 1650 110	0 75	50 50	м	σ	τ.105		 σ	τ.10 ⁵
65	3600	1800 120 1850 120	5 80	00	0.417		150			
70 80	2 900	1800 120 1600 100	0 70	00	0.417 .417	72.48	158	1.40 1.40	71.40	1 7 0
90 100	1900 1100	1150 75 750 55	0 60 0 40		.834	71.36	-	2.32 6.99	70.65 66.22	-
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I ———	gh, 1902					Wagner,	1903	·		
%	σ	%		%		c 	n _D	C	n _D	
0 2.5 5.0 7.5 10.0	74.16 74.53 74.19 73.76 73.42	15 20 25 30 35	72.79 72.17 71.54 70.84 70.01	40 45 50 60	69.00 67.86 66.13 62.02	0 0.303 0.606 0.909 1.212 1.515	1,33320 .33358 .33399 .33435 .33474 .33513	7.5° 13.127 13.435 13.743 14.051 14.359 14.667	1.34947 .34984 .35021 .35058 .35095 .35132	
			roperties			1.819 2.122 2.729 3.033 3.337 3.641 3.945 4.249	.33551 .33590 .33628 .33667 .33705 .33743 .33781	14.976 15.285 15.594 15.903 16.212 16.521 16.830	.35165 .35205 .35242 .35279 .35316 .35352 .35388	
	Willigen					4.554	.33820 .33858	17.139 17.448 17.758 18.068	.35425 .35461	
spectru	m lines		pectrum li	nes n		4.858 5.163	.33896	18.068 18.378	.35497 .35533 .35569	
A a B C D F b	1	50.48% .39558 .39681 .39782 .59893 .40181 .40548 .40618	(18.75°) F G G H H H	1,408 .411 .414 .415 .417	79 40 50 737	5.468 5.773 7.078 6.383 6.688 6.993 7.299 7.605 7.911 8.217	.34010 .34048 .34086 .34124 .34199 .34237 .34275 .34313 .34350 .34388 .34426	18.688 18.998 19.008 19.619 19.930 20.240 20.550 20.861 21.172 21.483	.35606 .35642 .35678 .35716 .35750 .35786 .35822 .35858 .35894 .35930	
Le Bland		D 20	% 40,52	n _E		8.523 9.135 9.441 9.747 10.054 10.361 10.668 10.975 11.282	.34463 .34500 .34537 .34575 .34612 .34650 .34682	21.794 22.105 22.416 22.728 23.040 23.352 23.664 23.977 24.290	.35966 .36002 .36038 .36074 .36109 .36145 .36181 .36217 .36252	
14.09 28.66	.35 .37 and Roh1	160 222	69.18	403		11.589 11.896 12.204 12.511 12.819	.34761 .34798 .34836 .34873 .34910	24.603 24.916 25.229 25.542 25.855	.36287 .36323 .36359 .36394 .36429	
%	n _D		×	n _D						
·		20				Zecchini	, 1905			
0 8.04 24.40	1.33 .34 .36	32	37.78 70.00	1.383 .403			%	t	n _D	
	d Manley,				τ.106	1 1 4 4	0 2.8152 5.5283 5.5270 2.0130 7.0966 7.1436 9.3114	20.0 21.5 21.6 21.2 22.2 22.2 19.1 20.0 23.7	1.33298 .33699 .33999 .34031 .34878 .34820 .39234 .39295 .40114	
2.19 3.85 6.76 9.29 11.88 16.11 18.27	1,336208 .338434 .342298 .345824 .349371 .355107 .358541	95 94 108 122 128 156 177	25.07 29.40 32.60 34.26 36.68	363091 365152 374225 377798 380354 383039 386262	190 217 231 267 280 279 292					

WATER + NITRIC ACID

Cheneveau, 190	7 			Perkin, 1	893		
[%] n _D	K	ⁿ D	•	%	(α) _{magn} .	%	(a) _{magn}
0 1.33 5.21 33 10.15 34 12.52 34	94 19.27	1.3524 .3589 .3647		22.54 26.81 32.36	0.9350 .9238 .9066	56.44 99.45	0.8042 .5292
ر حدر مورد حدر المدر	نيو خون الميكر جين الخدا الميكر اليكا التيكر اليكا التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر الت وي القدير التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر التيكر ال		هند. المدير على حين علي ومن حيد ألبد ألبد من ألبت حدد إليار أبدي على ومن ألبد ألبد ألبد ألبد	Mallemann	and Guillaume,	1945	
Hantzsch and	Durigen, 1928			d	* (a) mol magn. 10 ⁵	đ	(α) ^{mo1} magn, 10 ⁵
wt% mo1%	$^{ m n}_{ m D}$ wt%	mo1%	n _D		20°	1 0400	
3.0830 - 3.3752 - 3.3870 -	20° 1.33593 11.329 .33696 18.930 .33741 25.980 .33783 41.150	$\frac{9.1}{16.7}$	1.34770 .35811 .36781 .38698	1.1654	6.01 5.82 5.72 6.04 dians, gauss, ce		6.39 6.98 8.63
3.7388 - 3.7447 1.1 4.1960 1.2 4.7623 1.4	.33786 64.820 .33784 69.733 .33835 79.829 .33905	34.5 39.2 53.1	.40325 .40369 .40231	Guillaume			
mentana ara gan ara pantani ara ara pan pan pan ara pangan ara pan pan ara pangan ara pangan ara pangan ara pa Seminan ara san ara san ara san ara san ara san ara san ara san ara san ara san ara san ara san ara san ara san		========		×	*(°) _{magn.10} 6 5780 Å	%	$\frac{(\alpha)_{\text{magn}}}{5780 \text{ Å}} \cdot 10^6$
Lühdemann, 193	e mol%	n _{He}		4.72 7.81 10.00 12.67 15.94	3.833 3.740 3.672 3.592 3.488	17.84 20.99 27.80 39.28	3.427 3.333 3.136 2.814
0 1.3	25° 3248 31.708	1,400	51	F1	dians, gauss, ce	ntim.	
4.187 .3 6.832 .3	4020 38.223 4950 44.976 5530 52.831 6814 65.216 8161 79.709 9077 99.995	.4014 .4010 .3997 .3976 .3974	05 79 60 47	Okazaki, 1			
19.761 .3 25.607 .3	9077 99.995 9720	.3931		% Vei	(3514 Å)	% Ve	rdet's const.10 ⁵ (3514 Å)
Guillaume, 1946				5.87 12.28 19.50 25.64	4122 4053 3920 3863	31.80 42.22 51.18	3767 3641 3485
% ⁿ 5	780 Å %	n ₅	780 Å				
7.81 . 10.00 . 12.67 .	3402 20° 17.8 3444 20.9 3472 27.8 3507 39.2	9 .	3574 3616 3710 3856	Decker, 1	.926 X 18.3°		ard and and are also and are also are also are also are also are also are also are also are also are also are a
				6.5 31.7 52.0	-0.687 -0.571 -0.492	19 24 	ag and \$10 feet in the state age of the

Rangonadham and Qureshi, 1936		Veley and Manle	ey, 1902		
	χ	7-	4-14.2	α.10 ⁶	4.2-24.2°
0.00 -0.7200 38.50 4.80 .6597 43.33 6.60 .6399 47.85 10.33 .6333 48.15 20.57 .5992 54.60 29.85 .5557 60.20 34.85 .5378 64.25	-0.5194 .5228 .5040 .5033 .4851 .4613 .4518	0.625 2.732 4.595 7.585 10.75 13.99 14.95 16.88	100 150 205 283 341 391 402 428 476		158 241 246 265 370 403 446 455
Pacault and Chedin, 1950		18.44 19.32 23.89 25.50 28.97 30.17	484 540 550		525 542 585
% X %	χ	28.97 30.17	629 647		608 63 7
0 -0.720 79.59 9.25 .673 82.49 20.01 .629 86.71	-0.391 .378 .363 .354 .338 .331 .318 -0.316	33,55 38,10 42,33 44,41 46,56 51,24 54,60 56,29 58,32 60,42 60,60	700 770 817 847 864 942 980 980		672 -790 801 817 907 950 950 950
Kohlrausch and Grotrian, 1875 8	и 0 ° 18°	62.84 65.80 67.85 71.60 75.64 76.55 78.22 81.93 85.21 87.90 92.24 94.04 95.62 96.64 97.33 98.07 100.00	1058 1054 1088 1088 1088 1095 1143 1143 1200 1200 1200 1202 		1038 1043 1060
-		$\lambda_t = \lambda_u (1 +$			
Bouty, 1888		%	λ	%	λ
\$\frac{\pi}{8}\$ \frac{\pi}{8}\$ \$\frac{\pi}{8}\$ \$\frac{\pi}{6}\$ \$\frac{\pi}{1}\$ \$\frac{\pi}{6}\$	3620 3988 4180 5621 5835 5900 5665 4774 3681 2178	10.13	306.2 299.3 275.2 242.4 202.1 169.3 131.3 106.4 91.0 78.1 67.8 50.9 35.7 32.3 23.5 19.7	65.77 69.53 73.82 76.59 78.90 84.08 86.18 87.72 89.92 91.87 94.32 96.12 98.50 99.27 99.97	14.1 10.9 6.84 5.35 3.48 1.15 1.00 0.66 0.38 0.18 0.07 0.017 0.017 0.014 0.017

Jone	s and Getm	an, 1902,	1903 and 1	904	Rabinowi	itsch, 19	21			
М	λ	М	λ		8	н	8	ж		
	0	0					18°			,
0.5 1 1.5	213.30 194.95 184.89	2 2.5	169.23 155.43 140.97		38.0 44.2 50.4 56.6 62.8 69.0	4964 5652 6341 6998 7545 7819	75.2 81.4 87.6 93.8 100.0	7676 6901 5418 3123 0		
" Kuster	and Krema	ann, 1904								
%	ж	%	X							
		-16°			Chanukva	dze, 194	7			
20.0 25.0 30.0	3910 4160 4340	58.0 60.0 65.0	2720 2650 2380		%	0°	10°	н 20°	30°	40°
35.0 40.0 45.0 50.0 52.0 54.0 56.0	4120 3910 3660 3330 3180 2990 2870	58.0 60.0 65.0 70.0 75.0 77.0 79.0 82.0 85.0	2050 1630 1430 1160 893 634 317		7.82 15.29 18.78 22.99 25.49 27.70 29.82	2370 2700 3390 4220 4310 4380 4420 4320	2810 3180 3960 4900 4950 5010 5060 5080	3080 8580 4550 5350 5560 5590 5600 5670	3440 4620 4860 5860 5880 6000 6050	3710 - 6340 6380 6430 6420 6430
Jones,	1904; Jon	es and Bas	sett, 1905 λ	;	33.87 41.30 48.70 53.86 54.08 57.50 60.26 64.03 72.30 79.09	3940 3300 2780 2770 2700 2600 2450 1980 1500	4680 4010 3360 3290 3180 3170 2650 2200 1590	5270 4680 3890 3850 3580 3450 2860 2370 1710	5990 5590 5130 4280 4220 3730 3530 3170 2740 1840	5990 5340 4750 - 4120 3550 3020 1940
0.05 .10 .20 .30 .40 .50 .60	232.5 228.5 226.1 222.1 218.6 215.0 209.2 207.0	0.80 0.90 1.00 2.00 3.00 4.00 5.00 6.00	205.5 204.0 199.5 174.0 148.9 127.1 108.0 89.4		83.52 90.18 93.95 99.50	1070 870 420 369	1100 900 510 376	1220 980 530 390	1290 1040 570 390	1380
Johnst	on, 1906 λ		λ							
	^	N 			l					
0.001 0.100 1	235.0 227.1 194.2	2.625 5.250 10.500	146.4 98.7 40.0							

Heat constants.					
	Miscenko,	1931			
Thomsen, 1871	%		U		(0.110
mo 1% U		2.53°	21.07°	39.49°	60.11°
18° 0.5 0.982 1 .963 2 .930 4.8 .849 9 .768	1 2 4 6 10 15 20 25 30 35 40	0.9932 .9785 .9538 .9273 .8849 .8389 .7998 .7670 .7398 .7161	0.9872 .9758 .9521 .9286 .8861 .8426 .8063 .7790 .7576 .7371	0.9855 .9735 .9514 .9293 .8919 .8511 .8154 .7868 .7645	0.9886 .9780 .9570 .9359 .8999 .8627 .8301 .8051 .7847
Marignac, 1876	45 45 50 55 60 65 70 75 80	.6980 .6829 .6677 .6498 .6293 .6070 .5830 .5581	.6992 .6815 .6622 .6415 .6190 .5940	.7267 .7098 .6939 .6757 .6540 .6298 .6032	.7667 .7502 .7331 .7139 .6922 .6688 .6422 .6133
21-52° 4.32 0.9618 6.53 .9273 12.27 .8752 21.89 .8043 41.18 .7212	80 85 90 95 100	.5352 .5153 .4900 .4561 .4181	.5417 .5193 .4913 .4580 .4195	.5462 .5216 .4913 .4618 .4251	.5517 .5258 .4961 .4632 .4270
Pascal and Garnier, 1920 ### U #### U	Richards an m initial	o1%	921 Q dil		
20°		2	90°		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9	4 2 1 0.5 0.25	+160 135 119 119 122		

Richards and Rowe, 1921					
mo1% U					
20°					
4 0.8654 2 .9227 1 .9583 0.5 .9782 0.25 .9888					

Water + Phosphorous acid ($P0_aH_3$) Italiener, 1917	Water + Boric anhydride ($B_2 \theta_3$) (see also water + boric acid)
% f.t. % f.t.	A 100 M 100
75,58 0 84,12 30 81,95 20,25 85,00 35 82,64 25,40 87,42 39,4	mo1% m.t. mo1% m.t. 25 169-170 66.7 171-173 40 158-159 70 172-174 50 159-160 75 171-172 57 167-174 78.5 170-172
Agamennone, 1893	50 159-160 75 171-172 57 167-174 78.5 170-172 62.5 172-173
% d	
26.9° 0 0,99657	Mc Culloch, 1937
30.6629 1.16089 73.6916 1.46648	
70,0710 1,40040	
Zecchini, 1905	80.1 215-220 82.8 245-250 85.0 310-315 99.6 450-470
% t d n _D	
0 0 0.99973 1.33368 26,7750 10 1.13361 .36069 30,6629 26.8 .16089 .36436 73,6916 25.6 .46648 .41815	Water + Boric acid (${ m B0_3H_3}$) Tammann, 1885
	% p
Water + Arsenious trioxide (As ₂ O ₃) Nietzki, 1910	100° 4.79 749.8 10.08 736.9 11.59 733.7 16.68 719.0 21.48 703.9
% d % d	
16° 56.5 1.761 66.5 2.003 57.4 .781 67.7 .071 58.3 .803 68.9 .112 59.2 .826 70.2 .157 60.1 .850 71.7 .205 61.1 .875 72.9 .257 62.1 .903 74.3 .314 63.5 .932 75.5 .364 64.2 .964 77.4 .446	Lescoeur, 1890 t p dissoc. p (3+1) sat.sol. 5 - 5.8 10 - 6.8 20 2 12.1 43.5 5 - 66 16 - 79 30 - 100 60 - 128 242 -

Beckmann, 1890	Sborgi and Ferri, 1922
% b.t. % b.t.	% f.t. % f.t.
0 100 6.89 100.589 2.34 100.185 10.86 100.980 4.64 100.380 14.73 101.390	2.27 -0.76 9.36 +45 2.59 0 10.35 50 3.47 +10 12.88 60 3.69 12.2 15.58 69 4.89 21 19.10 80 6.43 31 23.94 90 7.21 35 28.09 99.5 8.02 40
Kahlenberg, 1914	
% b.t. % b.t.	
743 mm 0 99.37 3,06 99.63 16.64 100.94	Blasdale and Slansky, 1939
3.06 99.63 16.64 100.94 4.99 99.79 19.28 101.37	% f.t. % f.t.
4.99 99.79 19.28 101.37 8.05 100.09 20.95 101.50 10.74 100.38 22.66 101.78 12.36 100.55 25.25 102.29 14.13 100.78 26.69 102.38	1.52 0 6.50 55 1.77 5 7.30 60 1.98 10 8.12 65 2.35 15 8.87 70 2.62 20 9.80 75 3.06 25 10.73 80
	3.57 30 11.83 85 4.05 35 13.10 90
Jablezynski and Kon, 19 2 3	4.60 40 14.20 95 5.25 45 15.50 100
m b.t. m b.t.	5.76 50 16.48 103.3
0,4096 100,214 2,0300 101,061 0,8030 100,421 2,4167 101,265 1,1897 100,625 2,8180 101,472 1,5998 100,838 3,1766 101,656	Benrath, 1942 % f.t. % f.t.
Nasini and Ageno, 1909	31.0 110 63.4 160 35.2 120 70.6 166 39.2 126 77.6 172 45.7 138 85.0 176
% b.t. % b.t.	47.9
	56.5 152
0 99.97 13.34 101.035 2.060 100.16 15.65 101.260 2.286 100.19 21.50 101.785 4.083 100.32 22.38 101.900 7.693 100.61 30.15 102.270 9.400 100.77 satd. 103.090	Perova, 1954
% f.t. % f.t.	% f.t.
2,27 -0,76 E 15.58 69.5 2,59 0 19.11 80 3,69 12 23.30 90 4,90 21 28.10 99.5 6,44 31 36.70 108	6.40 30 10.35 50 15.80 70 23.00 90
8,02 40 45,00 115 10,35 50 52,40 120 12,90 60	Kasankin, 1891
tr.t. orthoboric-metaboric acid 107-108°	d sat.sol.
metaboric-pyroboric acid 138-140°	16.5° 33° 1.0127 1.0154

Water + Phosphoric anhydi (see also the system: H ₂ C	·· -	acid)	341 357 370 383 392	79.7 109.3 168.6 231.0 317.1 380.2	399 408 412 419 428	436 6 527 2 581 8 645 4 746 7
Brown and Whitt, 1952	t	p	385 406 426 435 447	81.5 100.7 175.8 255.3 315.1 401.7	% 456 464 470 479	481.0 570.5 644.2 748.9
85.5 53.3 96 89.2 104 124.9 111.5 170.2	120 130.5 154	234.7 344.0 752.0	425 443 457 471 485	99.3 148,1 202.5 265.9 335.2	503 513 518 523 532	455.8 529.8 591.8 646.0 749.1
87 41.5 93 57.8 103 89.9 111.5 134.4 66.1	115 127 138 161	156.2 242.8 350.9 752.1	495 515 539 545 560	399.4 85.9 101.6 168.4 193.1 255.0	583 598 613 624	380.5 468.3 568.3 642.2
104 52.1 117 93.3 126 128.9 137.5 199.4 105.5 39.2	147 154 177 4 150	285 8 352.6 750.0	566 631 655 672 689	295.6 88.5 170.9 233.1 306.2 382.7	634 % 708 717 723	748.6 533.0 608.3 679.5
123 90.3 130.5 119.3 142 181.2 115 45.6	161.5 188 150.5	343.9 757.0	698 705 744 756	459.0 91.9 117.9 195.2	733 % 816 833 845	754.0 499.3 566.4 672.1
123.5 71.7 129 93.3 138 134.2 120 39.3 138.5 86.5	160 166 193 % 173 177.5	294.6 347.5 755.0	780 793 694 2 16 745	237.2 318.7 365.5 92.7 88.0 135.3 190.1	852 808 824	752.7 414.3 483.1
156 166.2 70.3 132.5 30.9 147 63.6 156 94.3	207	356.7 755.0 243.0 339.3 758.9	768 786	254.8 317.0 b.t.	839 851 8 66	568.4 656.9 754.7
162.5 129.9 72.4 166 32.2 175 59.7 183 88.6 195.5 131.4	% 211 227 256	223 5 356 1 758.9	61.6 63.7 66.1 66.9 68.5 69.0	154.2 161.6 177.6 187.8 192.6 205.1	78.2 78.7 79.7 81.5 83.7 85.9	382.2 380.1 427.3 479.7 533.4
75.3 204 41.8 223 87.8 233.5 121.5 245 173.1	257 276 301	231.9 384.3 755.2	70.3 72.4 75.3 76.3	224.5 255.3 301.9 325.1	88.5 91.9 92.7	633.4 732.4 855.4 865.8
276 226.1 76.3 284 287.0 78.2	291 326	349.9 7 50	Gelbstein	and Temkin, 1953	3	
298 94.4 309 132.0 320 177.3 331 235.4 338 284.7 346 342.3	353 361 369 375 383	403.3 480.6 569.8 645.3 754.4	29.0	760 103 70.7 123 71.7 130 72.4	b.t. mm 240 260 284	% b.t. 74.7 304 76.3 318 77.9 325
267 35.0 278 56.8 295 92.2 310.5 163.7	% 327 344 380	250.2 363.3 753. 0	57.5 65.9 67.6 69.8	130 72.4 141 73.2 180 74.0 200 74.5 220	290 297 301	77.8 335 78.7 350 79.0 355 80.0 380

Schiff, 1860	D
% d % d	Brown and Whitt, 1952 b.t. Q vap.
0 0.999 15° 1 1.008 23 1.201 2 .016 24 .211 3 .024 25 .222 4 .031 26 .222 5 .038 27 .243 6 .046 28 .253 7 .054 29 .264 8 .062 30 .276 9 .070 31 .287 10 .079 32 .298 11 .088 33 .309 12 .097 34 .320 13 .105 35 .332 14 .114 36 .344 15 .123 37 .356 16 .132 38 .361 17 .141 39 .380 18 .150 40 .392 19 .160 41 .406 20 .170 42 .419 21 .181 43 .431 22 .191 44 .444	61.6 154.2 11510 63.7 161.6 11430 66.1 177.6 12250 66.9 187.8 11920 68.5 192.6 11910 69.0 205.1 12680 70.3 224.5 12610 72.4 255.3 14320 75.3 301.9 15790 76.3 325.1 15940 78.2 382.2 18120 78.7 380.1 16520 79.7 427.3 18790 81.5 479.7 20730 83.7 533.4 20550 85.9 633.4 20550 85.9 633.4 22560 88.5 732.4 27900 91.9 855.4 27300 92.7 865.8 26570
	Water + Phosphoric acid ($PO_{\mu}H_3$)
Phillips, 1909	(see also the system: water + phosphoric anhydride)
K n K n	Heterogeneous equilibria.
0°	
1.4 140.0 52.83 1375.0 2.87 253.3 53.22 1353.1 5.28 424.5 65.72 1022.6 16.09 806.4 71.29 787.6 22.60 1002.2 74.99 608.6 30.71 1281.6 79.21 468.0 33.75 1376.3 82.22 405.5 36.08 1441.3 92.07 220.3 38.49 1459.2 93.52 173.9 43.26 1491.6 100.03 140.6 48.90 1444.9	Tammann, 1885
Gelbstein, Shcheglova and Temkine, 1956 wt% H _b	
wt% H ₀ 4° 20° 40°	Dieterici, 1898
72.4 -5.43 -5.18 -4.85 73.0 -5.49 -5.25 -4.92 74.0 -5.58 -5.34 -5.04 75.0 -5.70 -5.45 -5.15 76.0 -5.78 -5.54 -5.25 77.0 -5.86 -5.63 -5.34 78.0 -5.94 -5.70 -5.42 79.0 -6.01 -5.77 -5.48 79.7 -6.05 -5.80 -5.49 81.0 -5.74 -5.50 -5.20 82.0 -5.52 -5.29 -5.00 83.0 -5.31 -5.09 -4.80 83.8 -5.20 -4.97 -4.67 H ₀ = -1g h ₀ is the acidity function	M p M p 0° 0 4.579 7.914 3.496 0.984 .510 12.740 2.710 2.278 .377 22.470 1.557 4.020 .135 39.880 0.636

Kablukov and Zagvosdkin, 1935	Smith and Menzies, 1909
Я	% f.t. % f.t.
25° 40° 60° 80° 0.00 23.75 54.85 149.38 355.10 10.00 22.63 54.21 147.19 348.45 20.00 22.22 52.21 142.32 335.59 30.00 21.52 48.65 133.51 314.78 40.00 19.88 43.47 120.33 284.82 50.00 17.04 36.77 102.57 245.45 60.00 12.94 28.80 80.87 197.33 70.00 8.08 19.95 56.38 141.97 80.00 3.12 10.77 30.89 81.75 90.00 1.69 1.96 6.73 19.98	76.7
Chambers and Frazer, 1900	tr.t. (1+2) - (1+10) 23.5° (1+10)-anh. 26.2° p sat.sol. (1+2) at 25° = 0.85 mm
M f.t. M f.t.	
	Ross and Jones, 1925
0.236 -0.535 1.410 -3.349 0.472 -1.039 1.620 -4.213	% f.t. % f.t.
Jones, 1904; Jones and Bassett, 1905; Jones and Getman, 1910 M f.t. M f.t. 0.10 -0.235 2.00 -5.55 .20 .458 3.00 -9.75 .30 .667 4.00 -16.50 .40 .868 5.00 -25.00 .60 -1.292 6.00 -38.00	62.50 -85.0 E 92.72 +28.28 67.50 -57.0 93.33 27.36 70.00 -43.0 93.74 26.08 72.50 -29.0 94.75 23.50 E 75.00 -17.5 95.22 25.88 78.75 0 95.56 27.30 84.07 +18.92 95.86 28.38 85.93 23.41 96.18 29.90 87.05 25.24 96.80 31.96 (anh.) 88,51 27.30 97.40 34.06 90.00 28.75 98.00 36.15 91.60 29.32 99.27 40.02 92.30 28.80 100.00 42.35
.40 .868 5.00 -25.00 .60 -1.292 6.00 -38.00 .80 -1.775 6.919 -52.00 1.00 -2.370	Elmore, Mason and Christensen, 1946 Isopiestic solutions
Jones and Getman, 1904	m ₁ m ₂
M f.t. 0.52 -1.111 1.04 -2.468 2.08 -5.398 3.12 -9.455	25° 0.1659 0.1099 2.1645 1.3713 1794 1166 5348 6253 2342 1480 5622 6763 3004 1876 9366 9097 3321 2180 3.0575 9926 4798 2956 3.9978 2.6669 5899 3612 4.3306 2.9047 6406 3915 5.5092 3.7763 7790 4799 5.7063 3.9129 9040 5569 6.4949 4.5067 1.0134 6196 6.5724 4.5694 0675 6535 7.5356 5.2619 6103 9993 8.0280 5.6239 7602 1.0969 8.5142 5.9769 2.0445 2904 8.7020 6.1139 2.1474 3592
	m ₁ - PO ₄ H ₃ m ₂ - NaC1

Hager, 1866	Properties of phases .	
17.5°		
17.5c	llager, 1866	% d % d
1. 38	% d % d	15°
1. 38 1. 006 48.31 1.324 2.76 1013 49.69	17.5°	0 0.9991 36.90 1.2299
17, 94	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10.25
17.94	11. 04 060 57. 98 .408 12. 42 069 59. 36 .421 13. 80 077 60. 74 .434 15. 18 085 62. 12 .446 16. 56 094 63. 50 .460	
10.27	17. 94 . 102 64. 88 . 474 17. 94 . 102 66. 26 . 489	
10.73	20.70 119 67.34 500 22 519	10.27 1.0497 9.80 1.1132
34.51 .217 81.44 .059	77 61 166 74.04 .072	29.66 % 38.86 %
Watts, 1866	31.75	48.06 % 58.65 %
Watts, 1866	37. 27 . 238 84. 20 . 691 38. 65 . 248 85. 58 . 707 40. 03 . 259 86. 96 . 723 41. 41 . 270 88. 34 . 739	n .
# d # d # d # d # Slotte, 1883 room t.	42,79 .280 89.72 .756 44.17 .291 91.10 .773 45,55 .302 92.48 .790 46,93 .313 93.86 .807	12.86 1.4051
% d % d room t. 68.47 1.508 38.98 1.247 66.81 492 37.68 ,236	Watts, 1866	
room t. 68.47 1.508 38.98 1.247 room temp. 66.81 492 37.68 ,236	% d % d	
66:81 492 37.00 .236	room t.	% d
62.99 .404 37.62 .217 47.99 1.3868 60.92 .442 30.47 .185 60.67 .434 28.87 .173 59.75 476 27.24 .162	66.81 .492 37.68 .236 65.02 .476 36.39 .226 62.99 .464 34.22 .211 62.64 .453 32.97 .197 60.92 .442 30.47 .185 60.67 .434 28.87 .173 59.75 426 27.24 .162	8.51 1.0575 17.65 1.1241
58.82 .418 23.90 .153 57.43 .401 24.69 .144 56.41 .392 23.38 .136 55.39 .384 21.58 .124 54.75 .376 19.64 .113 M d	58, 82 .418 25.20 .153 57, 43 .401 24.69 .144 56, 41 .392 23.38 .136 55, 39 .384 21.58 .124 54, 75 .376 19.64 .113	
54.12 .309 16.81 .095 52.45 .356 14.40 .081 51.58 .347 14.40 .081 50.71 .339 13.25 .073 0.00 0.9987 49.90 .328 11.90 .066 .25 1.0120 48.06 .315 10.20 .056 5.0 .0251 46.23 .302 8.51 .047 1.00 .0508 45.15 .293 5.73 .031 2.00 .0508 44.09 .285 4.18 .022 44.83 .276 2.64 .014	54, 12	0.00 0.9987 .25 1.0120 .50 .0251 1.00 .0508
41.59 .268 1.09 .006 40.25 .257	41.59 .268 1.09 .006	

Total I December 1005. James and	
Jones, 1904; Jones and Bassett, 1905; Jones and Getman, 1910	Guillaume, 1946
% d % d	% d
0° 0 0.999868 7.533 1.0408 0.489 1.0022 8.429 .0463 0.976 .0041 9.319 .0516 1.941 .0097 17.74 .1047 2.896 .0150 25.58 .1555 3.842 .0203 31.43 .2471 4.778 .0255 38.88 .2599 5.705 .0306 44.95 308.2	7.95 1.0436 18.75 .1080 26.67 .1663 58.29 .4131 78.05 .6152
5.705 .0306 44.95 .3082 6.543 .0364 50.49 .3429	Mason and Culvern, 1949
	M d M d
Zecchini, 1905	25°
% t d 0 10 0,99973 16,460 10 1,09447 25,032 13 .14645 36,4610 14,5 .22584 55,2920 13.9 ,38434	0.09927 1.0025 6.2463 1.3062 .10 .0026 6.7059 .3278 .1976 .0075 7.0 .3422 .2951 .0125 8.0 .3882 .6759 .0318 9.0 .4346 .9523 .0457 10.0 .4806 1.820 .0890 11.0 .5255 2.6188 .1290 12.0 .5719 3.3495 .1654 13.0 .6152 4.0220 .1988 14.0 .6591 4.6420 .2287 15.887 .7345
Pratolongo, 1913	4.420 .2287 15.887 .7345 5.7510 .2825
N d N d	
0.375 1.0070 1.50 1:0264 0.75 .0128 3.00 .0538	Sklyarenko and Smirnov, 1951 *** mol** 25° 35° 42° 50° 75°
Knowlton and Mounce, 1921	1.519 0.2828 1.0050 1.0016 0.9993 0.9960 0.9828 9.950 1.984 0.520 0.482 1.0447 1.0413 1.0278 27.08 6.371 1.592 1.537 1.496 1.468 1.315 40.11 10.96 2.556 2.495 2.462 2.414 2.269 54.72 18.17 3783 3.718 3.672 2.616 3.451 68.08 28.19 4.985 4.912 4.857 4.810 4.637 81.39 44.39 6.401 6.322 6.266 6.203 5.999 88.22 57.86 7.242 7.162 7.107 7.049 6.844 93.10 70.63 7.886 7.807 7.749 7.691 7.489 97.35 87.16 8443 8355 8297 8241 8048
36.53 .2253 85.61 .6946 48.12 .3151 87.29 .7117 51.61 .3467 87.56 .7408 53.23 .3618 90.26 .7486	Topchiev, Kurashev and Paushkin, 1953
	8 d 8 d
Manchot, Jahrstorfer and Zepter, 1924 c d 25° 11.473 1.0593	0.0 1.0000 75.2 1.6112 20.5 .1286 86.7 .7166 40.0 .2600 88.8 .7522 64.8 .5059 100.0 .8761
18.631 .0964 49.520 .2557	

		1 1000										
Christer	nsen and Ree					Slot	te, 1883				 :	
 	d 	 %	d			t	g 51:	% 1	7.65%	η 34.4]	1%	48.99%
0.0644 .0981 .1214 .1540 .2449	0.99745 .99765 .99779	19.81 21.85 23.82 25.83 27.81 29.70 31.82	1.112 .125 .137 .151	503 776 114		10 20 30 40	1721 1316 1043 850	2 2 1	2422 1835 1442	5490 4021 3069 2421		14059 9603 6953 5288
.3970 .4902 .7115 .9619 1,340 .479	.99986 1.00110	29.70 31.82 34.71 37.35 39.58 41.68 43.71	.177 .192 .213 .232 .249 .265	747 243 113 257 244		II	, 1895 -			د الله الله الله الله البروي ميرو . و الله الله الله الله الله الله الله الل		
1 .767	.00682	44.68	. 287	50°		<u> </u>	1 1	n (water	=1)	M	η (w ε	ter=1)
.987 2.235 .482 .911 .952 3.450	.00803 .00939 .01074 .01304 .01326 .01598	44.68 47.85 49.52 51.09 53.28 56.48 59.10	.315 .329 .342 .361 .389 .413	933 16 7 159 981		11 0.	.00 .25 .50	1.000 1.064 1.143	18°	1.0	1	.311 .739
3.937 4.496 4.501 5.016 5.924	.01867 .02174 .02174 .02463 .02963 .03515	64.54 66.40	.424 .458 .465 .483	29 363 55 91 15			arenko a	nd Smir				
6,906 7,861 8,955	.03515	70.16 77.51	.585 .595	87		8	mo1%	25 °		(water=1) 50°	7 5°
9,905 11,890 13,870 15,880 17,900	.04056 .04675 .05319 .05374 .07546 .08762 .09803	76.51 77.51 79.65 81.69 83.58 87.65 88.84 89.12	.623 .646 .668 .715 .729	47		1.519 9.950 27.08 40.11 54.72	6.371 10.96 18.17	1.052 1.310 2.255 7.196	1,050 1,294 2,206 6,793	1.044 1.285 2.161 6.543	1.046 1.273 2.119 6.250 11.35	1.031 1.236 1.967
Grotria	n, 1877				وهد هد اهد اهد اکثر ناس الد این این این این این این این این این این این این این این این این این این	68.08 81.39 88.22 93.10 97.35	28. 19 44. 39 57. 86 70. 63 87. 16	13.87 33.53 62.53 101.0 159.2	12.86 29.00 51.89 80.77 124.40	12.17 26.31 45.80 70.28 105.94	23.58 39.84 60.79 90.16	9.506 17.38 28.61 41.24 59.24
-	tη	t	<u>n</u>	t 		-=====	=======	=======================================	======	=======		
29.66 8 38.86 9 48.06 9	2.13 1714 3.26 2416 3.66 3397 5.49 5116 42 7046 0.29 12121 5.13 19569	19.90 19.98 20.18 20.50 30.48 30.39 29.75	1283 1746 2523 3458 3832 6485 9952	29.74 30.04 29.84 39.71 48.31 48.21 48.74	1025 1368 2048 2179 2656 4255 6153	Agam %	ennone,	1893 6.9°	n _D	**************************************		
	 η	%	η				6629	1. 1.	33226 36436			
	20°					73.	6916	ī.	41815			1
9.08 19.41 29.66 38.86	1280 4 1745 5 2521 6	8.65	5018 8651 3369				s and Get	tman, 19				
	ه هم چي چي در فيد چي چي هي هي هي هي دي. به هم چي چي چي چي چي چي چي هي چي چي د			=======	-======	М	n _r)	M	D ⁿ		
						0,065 .130 .260 .520	32	2616	1.04 2.08 3.12	1,33362 ,34191 ,34974	Į.	
			<u> </u>			======						

Zecchini, 1905	Kohlrausch, 1876
% t n _D	g т.10 ⁴ и g т.10 ⁴ и
0 10 1,33368 16,4600 10 34936 25,0320 13 35735 36,4610 14.5 36920 55,2920 13.9 39298	18° 4.92 99 306 49.80 173 2068 10.25 104 581 67.80 242 1527 20.05 114 1128 78.93 302 1023 30.52 131 1673 87.07 374 702 36.90 144 1921
Wagner, 1920	Lung 1004 June and Descott 1005
[₹] n _D [₹] n _D	Jones, 1904, Jones and Bassett, 1905 and Jones and Getman, 1910
17.5°	Μ λ Μ λ
0 1.33320 16,898 1.34798 0.401 .33358 17,342 .34836 0.802 .33397 17,787 34873 1.204 .33435 18,232 .34910 1.612 .33474 18,677 .34947 2.024 .33513 19,123 .34984 2.448 .33551 19,569 .35021 2.878 .33590 20,015 .35058 3.316 .33628 20,461 .35095 3.743 .33628 20,908 .35132 4.173 .33667 21,355 .35169 4.607 .38705 21,802 .35205	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
5.037 .33743 22,250 .35242 5.472 .33781 22,698 .35279 5.907 .33820 23,147 .35316 6.342 .33858 23,597 .35352 6,777 .33896 24,648 .35388 7,212 .33934 24,500 .35425	Jones and Getman, 1904 Μ λ Μ λ
7.648 .33972 24,952 .35461 8.084 .34010 25,404 .35497 8.521 .34086 25,886 .35533 8.958 .34124 26,308 .35569 9.396 .34162 26,761 .35606 9.834 .34199 27,215 .35642 10,273 .34297 27,670 .35678 10,712 .34275 28,126 .35714 11,152 .34313 28,582 .35750	0.065 82.18 0° 0.130 62.06 2.08 34.89 0.260 50.38 3.12 33.16 0.520 42.92
12,073 .34388 29,496 .36822 12,474 .34426 29,953 .35858	Wegelius, 1908
# 13.357 .34500 30.867 ·22930	t \lambda t \lambda t \lambda
13.799 .34537 31.324 .35966 14.241 .34575 31.781 .36002 14.683 .34612 32.238 .36038 15.125 .34650 32.695 .36074 15.568 .34687 33.152 .36109 16.011 .34724 16.545 .34761	54.3 N 14.8 1.22 35.2 2.32 74.4 5.07 16.5 1.30 46.2 3.12 84.1 5.51 26.0 1.75 59.3 3.88 93.7 6.01 32.5 2.06 66.2 4.22 2.715 N
Guillaume, 1946	64.3 19.9 75.3 20.7 85.3 20.4 68.7 20.3 78.4 20.7 93.0 20.2 74.3 20.5
⁵ π _{5780 Å} *(α) _{magn.10} 6 (5780 Å)	1.955 N 15.5 19.8 67.0 24.8 80.1 29.4 56.9 24.4 73.6 24.7
7.95 3.820 1.3409 18.75 3.629 .3527 26.67 3.472 .3623	0.0108 N 15.5 90.0 57.2 136.0 86.4 154.3 31.1 109.7 70.9 145.4 93.0 156.7
58.29 2.909 .3980 78.05 2.533 .4244 * In radians, gauss, centim.	0.00217 N 15.5 137.8 57.1 242.0 86.6 306.2 31.1 172.9 71.1 273.3 93.4 326.0

		-			···		
Smith and Menzies, 1909	Sk1	yarenko a	nd Smir	nov, 1951			
8 x 8 x	78	mo 1%		0.50	и	? ** .o	
29. 3°			25°		42°	50°	75°
89.7 863.9 94.5 707.8 90.5 833.4 95.3 690.2 91.2 806.1 96.2 670.0 92.0 781.5 98.8 610.2 93.6 732.4	1.519 9.950 27.08 40.11 54.72 68.08 81.39 88.22 93.10 97.35		2010	151.1 676.6 1756 2250 2233 1878 1246 981.0 836.1 713.8	2379 2067 1429 1149	162.2 731.0 1830 2496 2527 2304 1663 1363	169.7 765.2 2017 2796 3155 2908 2337 2014
Campbell, 19 2 6	93.10 97.35	70.63 87.16	615.0 509.3	836.1 713.8	1012 877.4	1066	1925 1728
% m ×				و هند چين چين دين دلووالند چون دين د هند چين چين شده است است اها څالو الاه			======
0° 8.93 1 441 16.40 2 731	Tomm	ann and T	`ofaute	1929			
16.40 2 731 22.73 3 929 28.18 4 1124 32.91 5 1238	P Kg				λ).100		
32,91 5 1238 37,04 6 1357 40,70 7 1374			0.001N	0.J1N	0,1	N 0.	5N
41.77 7.32 1396 43.51 7.95 1400 45.41 8.51 1408 47.14 9.10 1392 48.76 9.71 1376 49.49 10 1368 51.66 11 1342 54.06 12 1314	500 1000 1500 2000 2500 3000	20 40 20 40 20 40 20 40 20 40 20 40	9.7 4.1 16.5 8.5 23.5 13.0 27.2 17.4 32.3 21.5 37.6 25.5	11.0 9.7 19.8 17.4 27.4 24.8 33.9 31.2 39.3 36.3 43.7 40.9	15. 34. 30. 51.	4 40 7 36 0 62 8 55 5 82 3 73 8 10	.3 .5 .9 .1 .0 .8 .8 .9 .6 .0 .3
Mason and Culvern, 1949			1.0N	2.18	N 4.3	6N 8.	.73N
M \(\lambda\) M \(\lambda\)	500	20 40	$\substack{20.5\\18.3}$	20.1 18.7	17. 15.	6 13 7 13	3.9 2.4
0.001 336.38 1.820 55.44	1000 1500 2000 2500 3000	20 40 20 40 20 40 20 40 40	41.8 36.3 63.1 74.8 104.1 92.8 124.7 112.0	40.8 36.3 60.3 55.0 79.9 72.4 98.4 90.6 118.3 108.8	34. 32. 51. 48. 68. 63. 85. 79.	4 25 1 24 5 31 9 41 7 41 2 51 8 51 4 61	6 5.0 7.2 9.6 8.2 7.5 4

	d II
Gelbstein, Shcheglova and Temkin, 1956	% U
	21°
μ	80.00 0.4686
4° 20° 40° 60° 80°	82.00 .4593 84.00 .4500
5 - +1.06 +1.06 +1.06 +1.06 10 - 0.25 0.25 0.75 0.75	85,98 .4419 88,01 .4359 89,72 .4206
10 - 0.75 0.75 0.75 0.75 15 - 0.52 0.52 0.52 0.52 20 - 0.30 0.30 0.30 0.30	89.72 .4206
10 - 0.75 0.75 0.75 0.75 15 - 0.52 0.52 0.52 0.52 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.3	
25 - +0.08 +0.08 +0.08 +0.08 300.14 -0.12 -0.11 -0.09	
35 - 0.36 0.33 0.30 0.27 40 - 0.59 0.55 0.51 0.47	
45 - 0.81 0.76 0.70 0.64	Rumelin, 1907
50 - 1.03 0.97 0.90 0.83	% (initial) t Q dil*
55 - 1.26 1.19 1.11 1.03 60 - 1.52 1.43 1.35 1.26	(by mole water)
60 - 1.52 1.43 1.35 1.26 65 - 1.86 1.76 1.65 1.55 70 - 2.32 2.17 2.02 1.88 75 - 2.82 2.63 2.44 2.25 80 - 3.29 3.07 2.85 2.64 85 - 3.78 3.52 3.26 3.01	پر میں مدر مورسوں کے میں میں میں میں میں میں میں میں میں میں
75 - 2.82 2.63 2.44 2.25 80 - 3.29 3.07 2.85 2.64 85 - 3.78 3.52 3.26 3.01	15,32 17,52 8,22 15,41 17,48 8,23
85 - 3.78 3.52 3.26 3.01	21.43 17.18 12.21
85 - 3.78 3.52 3.26 3.01 90 -4.60 4.30 3.98 3.68 3.39 95 -5.05 4.77 4.44 -4.08 -3.75	H 21.57 - 17.15 - 12.30 - H
95 -5.05 4.77 4.44 -4.08 -3.75 100 -5.43 -5.18 -4.85 -	28.14 17.40 19.80 28.21 17.86 20.05 32.70 17.68 33.08
	28,14 17,40 19,80 28,21 17,86 20,05 32,70 17,68 33,08 32,75 17,61 33,91
$H_0 = -lg h_0 = acidity function .$	* for a very small dilution in water
	a very small dilution in water
Popov, Skuratov and Feodosiev, 1933	
% U % U	
20.5-22.0°	
20.5-22.0°	
20.5-22.0°	
20.5-22.0°	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .4113	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .4113	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460 28.15 .7856 66.13 .5349 29.96 .7735 68.14 .5242 32.09 .7590 69.27 .5151 33.95 .7430 69.50 .5160 36.26 .7270 71.88 .5046 38.10 .7160 73.71 .4940 40.10 .7024 75.79 4847	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460 28.15 .7856 66.13 .5349 29.96 .7735 68.14 .5242 32.09 .7590 69.27 .5151 33.95 .7430 69.50 .5160 36.26 .7270 71.88 .5046 38.10 .7160 73.71 .4940 40.10 .7024 75.79 4847	
20.5-22.0° 2.50 0.9903 46.22 0.6607 3.80 .9770 48.16 .6475 5.33 .9669 49.79 .6370 8.81 .9389 50.00 .6350 10.27 .9298 52.19 .6220 14.39 .8958 53.72 .6113 16.23 .8796 56.04 .5972 19.99 .8489 58.06 .5831 22.10 .8300 60.23 .5704 24.56 .8125 62.10 .5603 25.18 .8004 64.14 .5460 28.15 .7856 66.13 .5349 29.96 .7735 68.14 .5242 32.09 .7590 69.27 .5151 33.95 .7430 69.50 .5160 36.26 .7270 71.88 .5046 38.10 .7160 73.71 .4940 40.10 .7024 75.79 4847	
20.5-22.0° 2.50	
20.5-22.0° 2.50	
20.5-22.0° 2.50	
20.5-22.0° 2.50	
20.5-22.0° 2.50	
20.5-22.0° 2.50	
20.5-22.0° 2.50	

Water + Arsenic acid ($AsH_30_{f \mu}$)		Schif	f, 1860				
(see also : water + Arsenic anhydrid	e)	%*	đ	% *	đ	%*	đ
Tammann, 1885		1	1.0057	15° 25	1,1872	48	1,4340
% p		2 3	.0124 .0192	26 27	.1961 $.2052$	49 50	.4471 .4604
100°		5	.0260 .0328 .0397	28 29 30	.2144 .2237 .2332	51 52 53	.4740 .4878 .5018
11.24 746.9 19.11 735.4		6 7 8	.0467 .0536	31 32	.2428 .2525	54 55	.5161 .5307
25.41 723.3 31.82 709.3		9 10	.0608	33 34	.2625 .2726 .2829	56 57 58	.5455 .5604 .5757
38.60 687.5		11 12 13	.0752 .0825 .0900	35 36 37	.2934	59 60	.5013 .6072
		14 15	.0975 .1051	38 39	.31 4 9 .3259	62	.6233 .6397
		16 17 18	.1128 .1206 .1285	40 41 42	.3371 .3485 .3600	63 64 65	.6563 .6732 .6904
Menzies and Potter, 1912 % f.t. % f.t.		19 2 0	.1366 .1447	43 44	371 R	66	.7080 .7259
<u> </u>		21 22 23	.1530 .1614 .1698	45 46 47	.3838 .3961 .4085 .4212	68 69 70	.7440 .7623 .7811
21.09 -4.2 54.42 -30, 46.29 -18.8 63.46 -46,	8	24	.1784	77	.72.2	70	., 011
46.15 -18.8 63.37 -46.	.0		% (As ₂ 0 ₅)			
73.77 -37.3 86.63 19 76.55 -21.8 87.92 24	. 80 . 63						
$\begin{bmatrix} 76.59 & -21.8 & 87.94 & 24 \\ 81.19 & 0 & 90.32 & 30 \end{bmatrix}$.63	Kopp,	1888				
83.77 +9.78 92.57 34 83.62 9.78 92.64 34	. 14 . 81 . 81	%	d	£		d	
85.50 15.49 94.13 36	. 22			15°			
	.48 .48	1.24 2.47 3.71	1,008 .016 .025 .033	35. 37. 38.	05	1.293 .305 .319	
19.30 91.95	. 15 . 15	4.94 6.18	.033 .041	39. 40.	5 2	.333 .347	
89.45 25.28 97.08 77	. 85 . 85 . 15	7.41 8.65	.049	43.	23	.367 .3 77	
89.79 26.30 93.10 79 89.77 34.35 94.35 99	. 15 . 25	9.88 11.12 12.35	.067 .076 .084	45.	46 70 93	.388 .404 .421	
89.91 35.28 96.87 141	.25	12.35 13.59 14.82	.094 .103	49.	93 17 40	.438 .452	
89.94 35.28 96.96 141 90.51 45.23 90.45 45.23	.0	16.06 17.29 18.53	.114 .123 .133	50. 51. 53.	87	.469 .485	
(4+1) f.t. = 36.17°		19.76 21.00	. 143 . 153	54. 55.	34	.501 .519 .539	
	1	22.23 23.47	. 163 . 174 . 186	56. 58.	05	.559 .5 7 9	
	=======================================	24.70 25.94 27.47	. 198	59. 60. 61.	52	.598 .618 .634	
		28.41 29.64	.209 .220 .231	64.	75 99 22	.657 .677	
		30.88 32.11 33.35	.244 .255 .278	65. 66. 67	69	.699 .718 .740	
		34.58	.279	67. 69. 70.	16 40	.763 .787	
	Ē						

Water + Sul	fur dioxide	(SO ₂)		t p dissoc. t p dissoc.
Sins, 1862				0 305 9.55 1088
	p	*	р	2.80 432 9.60 1094 4.45 519 9.85 1147 4.60 530 9.90 1156 4.65 534 10.00 1177
0.99 1.48 2.44 3.38 5.57	27.0 49.8 89.6 133.7 239.0	7° 14.75 14.82 15.11 18.57 22.66	741.8 757.1 770.8 986.3 1291.0	2.80 432 9.60 1094 4.45 519 9.85 1147 4.60 530 9.90 1156 4.65 534 10.00 1177 4.90 552 10.20 1223 6.00 666 10.70 1356 6.75 743 10.80 1368 7.05 754 10.95 1410 7.35 801 11.30 1503 7.60 815 11.55 1596 8.40 926 11.75 1666 8.95 1008 12.05 1757 9.05 1022 12.10 1773
0.59 0.89	32.4 50.1	6.01 8.59	446.6 658.2	
1.09 1.28	65.0 77.3	9.09 9.09	728.9 729.5	t % t %
1.28 1.37 1.96 4.12	271.0	6.01 8.59 9.09 9.09 9.09 17.89 20.63	728.9 729.5 730.8 1570.0 1911.0	sat.sol. 0 19.09 7 14.96 2 17.89 8 14.38 4 16.74 10 13.34 5 16.18 15 11.11 6 15.54 20 9.42
1.67 2.25	205.9 293.1	5.03 10.39 13.04	701.6 1 5 65.0	6 15.54 20 9.42
5.12 5.12	696.0 697.6	13.04	2021.0	t % p t % p
1.09 3.76	191.5 664.0	50° 10.31	1961.0	L + (7+1) 0 9.42 310 7 14.82 752 2 10.55 390 8 16.04 870 4 11.89 495 10 19.09 1180
% b.	t .	% b.t.		8.62% f.t. = -3.1°
	760 mm			
4.49 4 4.76 4 5.03 4 5.21	8	.67 28 .00 26 .43 24 .92 22 .42 20 .07 18 .79 16		Tammann and Krige, 1925
6.10 8 6.45 8	14 1.4	.40 14		L+V+ice+ (6+1)
6.80 3 7.24 3	10 14	.34 10 .38 8		760 -2,6
				L + (6+1)
Roozeboom, 1	884 and 188	5		1188.0 +10.0 303.6 0 884.0 8.2 231.4 -2.0 808.0 7.4 208.4 -3.0 583.2 5.2 194.8 -4.0 455.0 3.6 149.8 -8.0 391.5 2.4 127.1 -12.0
t	p	t p		455.0 3.6 149.8 -8.0 391.5 2.4 127.1 -12.0
3.05 6.05	1273 1	1.0 1703 1.9 1756 2.1 1773 3.0 1823		
		·		

Maass and	Maass, 1928	8		Scho	enfeld, 1855	 f +	absorption coe	 ff
7.	p	\$	p	∥	absorption coer			
4.57 8.19 11.64 14.75 4.48 8.03 11.42 14.31 4.40 7.88 11.17 14.04 6.9	243 452 674 874	10° 18.91 19.86 23.10 100.00 16.5° 18.57 19.52 22.71 100.00 22° 18.22 19.14 22.32 100.00 25° 22.4 27° 17.85	1245 1288 1543 1733 1519 1560 1884 2188 1789 1861 2222 2641 2469	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 4.0 0 10.0 15 10.0 10.0 10.0 10.0 10.0 10	55.791	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 sec 26.0 36.0	18.766 cond series	
10.95 13.74	1183 1528	21.86 100.00	2556 3142	21.0	37.015	30,0	20,921	=====
t	p	t p		P	1000			
	V + L ₁ +	L ₂			ese, 1920			
	1666 1722 1752 2044 2098 2196	============	555555555555	0 4 10 15 16 17 18 19 20 *c=		21 22 23 24 25 30 35 40		
Terres ar	nd Rühl, 193	34 						=====
10 20 30	93	sat.t. inf.		Baun	ne and Tykociner,	1914		
1 40	121 129 132	-		%	f.t.	%	f.t. E	
50 60 70 80 90	132.5 129 123.5 113.5 94.5	- - - -		0.8 0.8 2.8 3.3 5.1 7.1 7.9 12.4 14.7	0 -0.2 -0.2 +3.5 +7.7 +6.8 +9.3 +12.1 +12.2 +12.0 +12.2	17.4 17.8 26.6 30.7 39.7 47.0 73.9 95.1 97.7	+12.2 +12.1 -74.0 +12.2 -73.9 +12.1 -73.9 +12.2 -73.9 +12.3 -73.9 +12.2 -73.9 +12.2 -73.9 -73.4 -72.5	
						-		

Tarres and	Ruh1, 1934			D		
		.10		Roozeboom, 1		
mo1%	ر س امار ساز امار ساز سرباره اما امار امار امار امار امار امار ام		f.t.	8	t 	d
1 2 3 4 99.0 99.1 99.2	+1 +2.3 +3 -37 -39.5 -43	9.5 9.6 9.7 9.8 9.9	-47.5 -53 -62 -70.5 E ₂ -66.5 -63.5 tr.t.α-β -61. α -63.5 β	9.42 11.11 13.34 16.18 19.09	20 15 10 5 0	1.041 .057 .065 .076 .099
E ₁ : -2.5°						
				Giles and S	chearer, 1886	
				Я	d %	đ
Schoenfeld	, 1855				15.5°	
s 0 10 20 40	at.sol. 1.00 1.05 1.00 0.95	6091 5472 2386		1 1. 2	.999 7 .0041 8 .0092 9 .0142 10 .0192 11 .0242 12 .0292 13	1.0342 .0392 .0443 .0494 .0544 .0595 .0646
	Bunsen, 1858			Almen, 1898		a
	d	*	d		15.5°	ب بين ديو چي در انجه پهر چي ځي چي چي چي چي دي دي د در در د چي چي بيد اندا چي هي هم اندا چي اندا کي دي هم
0 1 2 3 4 5 6 7 8 9	1.0000 .0024 .0049 .0075 .0102 .0130 .0158 .0187 .0217 .0247	11 12 13 14 15 16= 17 18 19 20 21	1.0311 .0343 .0376 .0410 .0445 .0480 .0517 .0553 .0591 .0629	1 4 7 10 13	0.0 .0 .0 .0	0140 0145 0147 0149 0151 absorbed volume of SO ₂
t	d	t	d	Pagliani and	d Battelli, 18	884
	sat.		<u> </u>	8	η	
0 1 2 3 4 5 6 7 8 9 10 11 12	1.0608 .0595 .0584 .0576 .0569 .0562 .0556 .0551 .0548 .0544 .0524	13 14 15 16 17 18 19 20 21 22 23 24	1.0475 .0448 .0415 .0382 .0346 .0307 .0265 .0221 .0175 .0125 .0074	12,2	0° 1775 1982 2175	12.1° 1232 1381

Thompson and Promisel, 1930	Traube, 1895
	% d
10° 20° × 30° 40°	15°
8 520 526 541 533 9 540 550 562 551 10 560 573 584 570 11 581 597 605 590 12 602 620 626 609 13 622 644 648 627 14 643 667 669 647	0.00 0.99913 5.43 1.03798 8.81 .06379 12.14 .08974 17.94 .13855
15 663 690 691 666 16 684 709 708 680 17 703 725 720 691 18 713 738 730 701 19 729 749 738 708 20 739 757 743 713 21 749 764 748 716 22 755 767 753 715	Stone, 1923 %
	20°
Water + Selenium dioxide (SeO ₂) Manchot, 1922 ** f.t.	0.00 1.3330 37.62 1.3850 3.97 .3371 38.71 .3871 7.09 .3408 39.39 .3883 9.59 .3438 40.74 .3912 11.68 .3461 41.66 .3931 13.03 .3480 42.59 .3946 13.85 .3490 43.17 .3961 15.56 .3513 43.44 .3962 16.96 .3532 45.22 .4011 18.61 .3551 48.11 .4065 19.54 .3562 50.22 .4112 21.11 .3586 52.33 .4152 21.96 .3599 54.42 .4212 23.40 .3621 57.02 .4280 24.87 .3640 60.09 .4364 25.53 .3640 60.09 .4364 25.53 .3640 62.71 .4431 26.57 .3665 64.66 .4494 27.60 .3681 66.44 .4562 28.68 .3701 68.91 .4631 30.27 .3727 70.70 .4683 31.25 .3742 72.91 .4771 32.32 .3761 74.43 .4830 33.64 .3784 75.77 .4889 34.84 .3803 77.64 .4965 36.95 .3837 79.14 .5012
Etard, 1894	
% f.t.	
42,2 -10	
42.2 -10 45.8 - 2 54.3 + 9 73.7 +34 79.6 +55 79.4 +90	

WATER + SELENIUM TRIOXIDE

Water + Se	lenium Tr	ioxide Se0₃)	95.37 43.2 13.5 - 95.66 53.0 13.4 - 95.85 59.6 13.5 - 96.94 65.6 13.3 - 96.51 79.2 13.4 - 96.72 85.0 97.50 97.2 98.18 105.6 -
Dostal, 1	1955			97.50 97.2
	f.t.	E	solid phase	99.50 117.3
87.10 87.30	60.4 62.0	-	A. "	99.81 118.8 $A = H_2 Se_0$, $B = H_4 Se_8 O_{11}$ $C = H_2 Se_2 O_7$
87.42 87.50 87.57	62.2 62.3 62.4	-	ir tr	solid phase % f.t.
87.69 87.90 88.15 88.45 88.45 89.25 89.62 89.80 89.80 90.22	61.9 60.9 59.7 57.8 52.5 49.3 47.8 47.8 43.5 42.1 39.2	12.3 12.4 12.2 12.3 25.3 12.3 25.3	" " " " " " " " " " " " " " " A+B	H ₂ SeO ₄ 87.57 62.4 H ₂ SeO ₄ =H ₄ Se ₃ O _{1,1} 91.4 25.4 tr.t. H ₄ Se ₃ O _{1,1} 91.36 25.4 H ₄ SeO ₄ -H ₂ Se ₂ O ₇ 92.8 17.8 E H ₂ SeO ₄ -H ₂ Se ₂ O ₇ 91.9 12.4 E metast. H ₂ Se ₂ O ₇ 93.37 13.8 H ₂ Se ₂ O ₇ _S2O ₅ 94.7 13.5 E
90.30 90.51	$\frac{42.1}{39.2}$	12.5	Ā	
90.55 90.63	37.5 37.3	25.3 25.3 12.4	_ A	
90.90 90.97 90.97 91.02 91.02 91.13	33.0 32.5 32.5 30.9 30.9 29.5	25.4 25.4 25.4 12.6 25.4 12.5 12.5	– B A B A	Water + Selenic acid (${\sf SeO_4H_2}$) Kremann and Hofmeier, 1908
91.26 91.30	27.7 26.6	25.3 25.4 25.4	-	8 f.t. 8 f.t.
91.37 91.44 91.59 91.59 91.65 91.80 92.00 92.17 92.25 92.25 92.37 92.37 92.45 92.45 92.90 93.18	25.5 25.4 24.3 25.1	12.5 12.6 17.8 17.8 17.8 17.8 17.8 17.8 17.8 17.8	A A A A B B A A	0 0 57.7 -56.9 A 8.3 -3.1 64.8 -61.0 A 8.3 -3.1 64.8 -54.2 A 10.6 -3.9 67.3 -52.6 A 11.0 -7.0 69.4 -51.7 A 11.0 -8.3 70.8 -52.6 A 21.0 -10.5 74.7 -53.3 B 23.9 -12.2 78.4 -24.5 25.8 -15.3 79.0 -20.0 30.1 -21.4 79.9 -7.0 A 31.9 -23.3 81.5 +3.5 33.0 -23.2 83.2 13.1 33.8 -26.2 84.9 21.0 34.0 -24.9 86.8 24.0 35.7 -28.3 87.0 25.0 A 35.9 -31.1 88.7 25.8 38.9 -37.2 90.7 21.9 42.0 -48.2 92.7 26.3 42.3 -49.0 94.9 40.2 43.1 -56.9 A 99.9 59.9 43.7 -55.6 45.2 -63.5
93.68 93.85 94.04 94.27 94.50	18.6 18.4 17.8 16.8 15.5 13.8	13.2 13.4 13.4	-	E ₁ : 43.0% -83° E ₂ : 91.5% 19° tr.t.: 74.0% -56.°
94.68 94.80 94.93 95.05 95.10 95.25	13.8 15.1 20.5 25.9 32.7 34.0	13.4 13.5 13.5 13.5 13.6	- - - - C	

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WATER + SELENIC ACID

Diemer and Lenher, 1909 Kapustinski and Jdanova, 1951 f.t. f.t. 66.23 68.23 69.95 70.39 -51.5 (1+1) 20° -1.5 2.96 1.9 2.1 2.6 3.7 4.2 51.9 4.65 7.12 1.5590 .5795 .5870 0.9982 52.50 53.91 54.42 55.47 56.07 57.80 53.7 55.5 0.00 $\substack{0.89\\1.33}$ 1.0048 8.09 74.08 74.31 .0083 48.5 9.79 44.3 2.58 3.60 .0177 .6029 10,86 75.43 76.61 77.75 78.75 79.52 42.6 .0247 .6112 14.36 6.9 9.2 9.9 10.9 .0332 29.8 4.50 .6410 16.58 19.5 5,20 58.45 59.38 .0393 .6498 18,80 6.62 7.12 7.37 20.0 .0496 .6618 21.63 23.27 60.73 61.25 62.00 63.72 64.37 .6937 .7030 .7169 14.2 80.05 8.6 .0553 25.19 12.4 .0608 80.45 6.6 8.01 16.6 28.44 81.03 -0.5 9.33 .0710 .7472 19.2 20.5 30.88 .7641 .7960 .0768 82.38 +7.4 10.05 31.23 33.11 84.80 86.85 87.79 88.97 19.8 24.7 25.2 25.8 35.7 45.5 11.66 12.50 .0904 .0974 66.06 67.31 .8042 34.78 40.17 41.75 13.48 14.22 15.54 .1040 .1110 25.4 23.8 68.08 . 8405 89.96 90.39 21.9 13.9 . 1231 69.37 .8716 42.44 46.71 47.76 54.1 15.54 16.67 17.79 18.48 19.07 20.48 21.81 22.54 23.63 . 1332 70,12 .8898 70.5 74.1 E 71.6 63.2 . 1438 91.96 70.80 .9053 71.42 73.60 74.48 75.08 76.21 . 1503 . 1561 .9209 97.60 54.26 .9610 55.60 . 1692 .9810 58,0 59.04 . 1818 9953 55.7 59.89 2.0235 .1888 62.15 . 1888 . 1993 . 2105 . 2210 . 2290 . 2356 . 2429 . 2461 . 2546 . 2684 . 2813 77.66 78.11 79.95 .0625 23.63 -52.9 64.13 .0709 24.88 25.94 26.72 27.31 (4+1).1160 (2+1)(1+1)80.83 . 1422 80.83 81.59 82.58 83.11 84.15 84.44 85.10 $.\,18\dot{3}\dot{1}$ 28.06 .2008 28.26 .2300 .2387 29,00 30,10 .2084 .2813 .2971 .3028 .3138 .3300 31.40 . 2552 Vuillard, 1956 (fig.) .2833 .3117 32.82 86.08 32.32 33.30 34.25 35.72 36.45 37.38 87.35 f.t. tr.t. .3340 88.14 I II H 89.50 .3762 .3403 90.35 .4115 91.50 .4360 .3669 1ŏ 92.83 .4598 -3 39.51 .3752 -88 93.42 .4765 20 30 -88 -9 40.62 41.74 .3895 .4882 94.26 95.28 -19 .4021 .5144 40 -39 42.82 .4155 -83.4 -83.4 -83.4 -83.4 -83.4 .5445 .5647 .5827 .5925 96.90 43.82 45 -60 .4284 97.66 98.60 99.20 -83.4E 49 44.02 .4306 -78 -72 4589 50 -88E 45.96 -88 52 -78 -88 -88 46.45 47.75 .4663 54.8 -68,5 -68.5 .4865 -68.5 48.61 49.70 50.55 60 -56 .5012 -88 -68.5-<u>5</u>1.7 .5154 66.8 70 74 75.5 77.7 -5**7** E -57 -57 -57 -54.5E .5281 -29 -27 .5389 -45 -24 +17 -54.5 -57 -24 85 -24 90

535

. Kapustinski and J	danova, 1951		Stone, 1	923			
76	d %	đ	%	n _D	%	n _D	د مند ميا يي يې مندمند مني بند مند اخد امي
4.23 .0 9.12 .0 14.11 .1 20.71 .1 25.36 .2 30.76 .2 36.70 .3 41.81 .46.97 .2 52.90 .5 57.88 .0 60.98 .6 63.02 .6 63.02 .6 63.92 .6 63.92 .6 678.95 .2 68.99 .1	25° 12393 67.45 13102 68.95 16988 71.00 1205 74.14 7244 77.33 11857 79.34 17566 80.34 14445 81.38 16790 83.37 17850 87.23 17900 88.25 170678 90.31 174582 92.36 176644 94.33 180964 97.27 0° 1377 86.99 1888 88.06 1377 86.99 1888 88.06 1379 89.25 1377 86.99 1389 97.27	1.84057 .87392 .92075 .99657 2.07819 .13311 .16009 .18983 .25314 .36600 .39584 .42355 .45411 .50817 .55731 .61757 2.4343 .4650 .4885 .5181 .5262 .5345 .5433 .5599	0.00 4.62 6.66 9.28 11.99 13.25 14.32 15.85 17.87 18.40 20.00 21.77 22.29 23.73 25.21 27.09 27.53 28.63 29.68 31.05 33.22 33.84 35.00 36.18 38.01 39.34	1.3330 .3383 .3449 .3443 .3503 .3527 .3558 .3565 .3660 .36610 .3685 .3706 .3723 .3751 .3780 .3780 .3780 .3780 .3780 .3780 .3780 .3881 .3881 .3901	61.88 63.05 64.33 65.89 67.18 68.71 70.27 71.39 73.22 74.75 76.01 77.17 79.21 77.17 79.21 81.33 83.08 84.69 85.33 86.70 88.91 89.16 91.95 92.75 93.39	1.4332 .4352 .4382 .4416 .4461 .4499 .4538 .4572 .4616 .4659 .4696 .4728 .4728 .4792 .4811 .4860 .4946 .4950 .4950 .5047 .5065 .5047 .5065 .5079 .5088 .5122	
% n (wa	ter=l) %	η (water=1)	41.68 43.24 44.77 46.62	.3947 .3980	93.39 94.31	.5136 .5146	
4.23 1. 9.12 1. 14.11 1. 20.71 1. 25.36 1. 30.77 1. 36.70 1. 41.81 2. 46.97 2. 52.90 3. 57.88 3. 60.98 4. 63.02 4. 63.92 5.	25° 06 67.45 13 68.95 23 71.00 39 74.14 51 77.33 68 79.34 92 80.34 21 81.38 53 83.37	6.15 6.89 7.92 10.21 13.49 16.40 17.92 19.82 24.27 32.11 33.83 35.29 36.16 37.08 37.07 37.22	444.72 46.62 50.53 52.09 54.19 54.24 55.76 57.38 58.90 60.41	. 4013 . 4078 . 4115 . 4149 . 4151 . 4189 . 4221 . 4258 . 4289	94.41 95.63 95.89 97.28 98.36 98.70 98.98	.5155 .5158 .5168 .5168 .5172 .5171 .5170 .5160	

Water	+	Selenium	oxychloride	(SeOC12)

Waring, Steingiser and Hyman, 1943

đ

	25	>	
0.00 8.45 14.76 28.50 34.05	0.9969 1.4770 1.7015 2.0120 2.0900	42.40 57.09 67.75 100.00	2.1775 .2785 .3354 .4208

mo1%

Water + Selenium dioxide.hydrochloric acid (SeO₂HC1)

Ditte, 1877

mo1%

t	p dissoc.	t	p dissoc.
10 30 40 55	0 15 48 142	75 76 100 118	313 338 664 1012

Water + Selenium dioxide, di(hydrochloric acid) ($SeH_2O_2Cl_2$)

Ditte, 1877

t	p dissoc.	t	p	dissoc.
-20 -18.4 0 +12 13.5	60 70 219 418 447	15.0 15.2 22.5 33.0		483 506 672 995
			=-	

 H_20 + Sulfur anhydride ($S0_5$)

See also the systems:

Water + Sulfuric acid and Sulfur anhydride + Sulfuric acid

Knietsch, 1901

p	b.t.	%	p	b.t.
750	140	82.3	759	212
750	162	83.4	759	170
750	202	86.45	759	125
750	240	89.5	759	92
750	292	93.24	759	60
		99.5	759	43
753				
	750 750 750 750 750 750 750	750 140 750 162 750 202 750 240 750 292 750 317	750 140 82.3 750 162 83.4 750 202 86.45 750 240 89.5 750 292 93.24 750 317 99.5	750 140 82.3 759 750 162 83.4 759 750 202 86.45 759 750 240 89.5 759 750 292 93.24 759 750 317 99.5 759

Rudorff, 1862

	%	f.t.	
•	4.16 7.96 14.72 17.75	- 2.05 - 4.50 -11.75 -17.50	

Knietsch, 1901

Miletsti,	1901		
K	f.t.	Я	f.t.
0 1 2 3 4 5 6 7 8 9 10 11 12 13 145 16 17 18 19 20 21 22 23 64 65 64 65 66 67 68	0 - 0 . 6 - 1 . 0 - 1 . 0 - 2 . 0 - 2 . 7 - 2 . 0 - 2 . 7 - 3 . 4 . 4 - 5 . 3 - 6 . 0 - 7 . 2 - 7 . 9 - 8 . 2 - 9 . 8 - 11 . 2 - 15 . 2 -	70 71 72 73 74 75 76 77 78 80 81 81 63 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	f.t. + 4.0 - 1.0 - 7.2 -16.2 -25.0 -34.0 -28.2 -16.5 - 5.2 + 3.0 + 7.0 +10.0 + 8.2 - 0.8 - 9.2 -11.0 - 2.2 +13.5 +26.0 +34.2 +34.2 +34.2 +34.2 +34.2 +34.2 +34.2 +34.3 +34.2 +34.3 +34.9
69	+ 7.0		

Giran, 1913 (fig.)	Bineau, 1848
% f.t. % r.t.	g d % d SO ₃ SO ₄ H ₂ SO ₃ SO ₄ H ₂
82 +8.0 91 32 84 -3 92 23.5 85.2 -9.5 93 +4.0 E 86 +8 94 +20 87 22 94.7 +26.0 88 29 96 27 89 33.5 98 29.5 90 35 (1+2) 100 30	15° 1 1.008 1.0060 51 1.529 1.407 2 .016 .012 52 .544 .417 3 .024 .018 53 .555 .427 4 .033 .0249 54 .572 .437 5 .040 .031 55 .584 .447 6 .048 .038 56 .599 .4574 7 .057 .0455 57 .614 .468 8 .066 .0547 58 .626 .479 9 .075 .060 59 .641 .489
Vuillard, 1954 (fig.) f f.t. tr.t.	10 .084 .067 60 .655 .500 11 .094 .0746 61 .674 .511 12 .103 .082 62 .688 .522 13 .113 .090 63 .700 .533 14 .122 .097 64 .715 .544 15 .132 .105 65 .729 .556 16 .141 .1126 66 .741 .577
0 0 0 - 10 -6 -7 20 -22 -125 30 -62 E	17 149 120 67 .754 .579 18 159 128 68 .769 .591 19 169 135 69 .780 .603 20 179 .143 70 .791 .614 21 189 .1506 71 .801 .626 22 .199 .158 72 .809 .638 23 .209 .167 73 .818 .650 24 .219 .173 74 .824 .662 25 .228 .181 .75 .829 .674 26 .238 .189 .76 .833 .685 27 .247 .197 .77 .836 .697 28 .257 .2055 .78 .838 .709 29 .267 .214 .79 .839 .721 30 .277 .222 .80 .840 .733 </th
Brayford and Wyatt, 1956 f.t. f.t.	38
(1+2) f.t. = 35.07°	Thomsen, 1870, 1871 and 1882
	18° 16.5 1.4722 2 1.0692 9.1 .2870 1 .0355 4.8 .1593 0.5 .0180

			%	d	%	đ	
				15° 45°		15°	45°
Winkler, 1899) 		79 25	1.8418 -	85.30	1.920	1.887
đ	%		78.35 78.92	1.8429 -	87.14 88.97	1.957 1.979	1.920 1.945
	S0 ₃	SO ₄ H ₂	79.18 79.72	1.8431 - 1.8434 -	90.81	2.009	1.964
	20°		80.53 81.14	1.8403 - 1.8388 -	92.65 94.48	2.020 2.018	$\frac{1.959}{1.942}$
1.835	75.31	92.25	81.44	1.8418 - 1.8500 1.822	96.32 98.16	2.008 1.990	$\frac{1.890}{1.864}$
. 840	77.38	94.79 97.11	81.63 83.46	1.888 1.858	100.00	1.984	1.814
. 845 . 850	79.28 80.01	98.01	ļ				
. 8 55 . 860	80.95 81.84	99.16 98.46					
. 865 . 870	82.12	97.34 95.76	Bright,	Hutchison and Smit	h, 1946		
. 875	82,41 82,63 82,81	94.56	<u> </u>	đ	%		d
. 880 . 88 5	82.81 82.97 83.13	93.58 92,71					
. 890 . 895	83.13 83.43	91.84 90.66		25°	01.00	1 00	201
. 900 . 905	83.48 83.57	89.93 89.44	48.21 55.09	1,4838 ,5 7 49	81.08 81.27 81.53		282
.910	83.7 3	88.57	59.73 64.73	.6433 .7125	81.53 82.81		36 7 53 0
. 915 . 920	84.08 84.56	86.67 84.05	69.34 72.71	. 77 09	83.48 85.73	. 86	529 060
.925 .930	85.06 85.57	81.33 78.66	li 77.78	. 8035 . 83 01	86.95	.93	317
. 935 . 940	85.57 86.24 86.78	74.35	79.47 79.64	. 8326 . 8328	91.68 92.33	.99	912 940
. 945	87.13	71.97 70.06	80.42	. 8321	93.65	.99	920
. 950 . 955	87.41 87.55	68.54 67.23		45°			
. 960 . 9 65	88.22 88.92	64.13 60.32	48.39 55.21	1.4691 .5604	82.79 83.50	1.83	345 143
. 970	89 . 83	55.36	59.87 54.73	.6277 .6936	83.94 85.77	. 85	553
. 998	0	0	69.34	. 6936 . 7453	86.92		857 L04
			72.61 77.78	.7832 .8110	88.62 90.22		351 536
			79.50 80.58	. 8148 . 8137	91.61 92.49	.96	505 592
Knietsch, 190)1		81.32	. 8112	93.90	.94	141
%	d %		81 .34 81 .35	. 8104 . 8112	96.08 98.73		117 195
76				60°			
81.63	35° 1.8186 91.18	1.9749	48.10	1.4562	81.63	1.79	
81. 99	.8270 91.55	.9760	54.93 59.73	.5516 .6131	82.78 83.16		197 231
82.36 82.73	.8360 91.91 .8425 92.28	.9 772 .9 7 54	64.51 69.13	. 6771 . 7364	83.49 84.29	, 82	295 397
83.09 83.46	. 8498 92.65 . 8565 93.02	.973 8 .9 7 09	72.26 75.61	. 7651	85.80	. 86	589
83.82 84.20	.8627 93.38 .8692 93.75	. 9672 . 9636	77.07	. 7881 . 7950	86.94 88.61		924 160
84,56	.8756 94.11	.9600	79.32 80.60	. 7990 . 7983	90.14 91.61		290 328
84.92 85.30	.8830 94.48 .8919 94.85	.9564 .9502	81.28	. 7963	92.29		233
85.66 86.03	.9020 95.21 .9092 95.58	.9442 .9379	81.63	. 7960 80°			
86.40 86.76	.9158 95.95	.9315	48.34	1.4411	81.62	1.78	3 01
87.14	.9280 96.69	. 9251 . 9183	54.84 59.75	. 5307 . 5963	82.76 83.19	. 80)32)84
87.50 87.87	.9338 97.05 .9405 97.42	.9115 .9046	64.51	. 6580 . 7157	83.47	, 80	092
88.24 88.60	.9405 97.42 .9474 97.78 .9534 98.16	. 8980 . 8888	62.23 72.14	. 7447	84.22 85.78	. 85	239 509
88.97 89.33	.9584 98.53	. 8800	76.25 79.39	. 77 35 . 7810	86.93 88.58	. 89	718 900
89.70	.9643 99.26	. 8712 . 8605	80.32 81.28	. 78 13 . 77 93	90.11	.90	021
90.07 90.44	.9672 99.63 .9702 100.00	. 8488 . 8370					
90.81	.9733	. 20. 0					

Lidbury, 1902	Bright, Hutchison and Smith, 1946
t velocity of crystallization	% n % n
82.69 \$ -16.8	48. 21 5020 81.08 24000 55. 09 7700 81.27 24370 59. 73 11200 81.53 24770 64.73 17090 82.81 26010 69. 34 21830 83.48 26650 72. 71 21320 85.73 31000 77. 78 19510 86.95 36590 79. 47 20310 91.68 58640 79. 64 20470 92.33 55400 80. 42 21520 93.65 42710 48. 39 3340 82.79 13490 55. 21 4960 83.50 13760 59. 87 6880 83.94 14180 64.73 9490 85.77 15960 69.34 11470 86.92 18100 77. 78 11110 90.22 23240 79.50 11650 91.61 22060 80.58 12060 92.49 19115 81.32
- 5.0 1.45 0.78 80.78 \$ -15.2 1.10 - 6.1 0.83	64.51 4380 83.47 6090 62.23 5090 84.22 6290 72.14 5220 85.78 6820 76.25 5300 86.93 7330 79.39 5350 88.58 7810 80.32 5440 90.11 7900 81.28 5630
Grassi, 1851 mol % τ π 33.5 13.6 24.2 25 14.6 25.0 20 16.5 27.1 16.5 14.7 27.9 14 14.2 28.3 9 14.6 31.5	Schwab and Kolb, 1955 20° 30° 40° 50° 60° 80° 100° 132° 82 28540 19990 - 10880 - 5420 3771 2370 83 29700 20780 - 11330 - 5660 3933 2468 85 34955 24040 - 12810 - 6260 4296 - 87 44710 29710 20720 15030 15030 6970 4647 - 88.5 - 36320 24400 17170 17170 89.5 - 41380 26680 18110 89.89 - 42600 26910 18065
	89.89 - 42600 26910 18065

Knietsch	, 1901			Kohlrausch, 1	878		
%(1+1)	minutes of flow	%(1+1)	minutes of flow	%	ж	$\alpha.10^3$	β.105
9.5 18.7 27.8 37.3 46.4 55.9 65.2 74.4 81.5 86.1 86.8 89.2 93.8	23° 100 100.3 101.3 101.3 102.6 106.0 109.3 114.6 125.8 138.4 141.7 142.0 139.7 129.8 137.1	97.7 98.6 100.3 100.9 101.9 103.4 104.4 106.8 111.2 113.2 115.6 118.1 120.1 122.5	139.7 140.4 145.7 147.0 147.7 151.0 155.6 166.9 170.8 198.7 192.0 145.0 125.8 109.9	78.37 79.08 79.08 79.33 80.34 80.88 81.17 81.29 81.35 81.42 81.43 81.45 81.45 81.45 81.45 81.45 81.45 81.45	9.32 840 797 822 588 358.7 211.6 156.5 106.6 85.0 79.3 87.5 115.9 110.8 140.8 186.0	.8° 25 28 28 27 27 28 29 32 37 40 36 31 32 31	20 22 21 25 40 34 30 26 20
Smits, La	nd and Bouman,	1921		82.53 82.69	214.9 236.2 267.7 273	31 33 31 31	- - 19
×	se 15°	conds of flo	w 60°	83.33 84.51 86.21 87.84	287 269 137.2 92.3	31 32 39	20 23 - 42
88.84 82.13 81.72 81.55 81.42 80.53 77.55 76.27	327.2 246.2 244.4 236.8 236.8 - 241.4	141.2 135.6 130.4 120.4 101.6	80.8 78.8 78.2 75.6 77.4	88.32 88.73 88.85 89.14 89.58 89.83 90.11 90.67	64.3 45.9 40.4 35.3 25.1 18.76 13.87 7.63	40 47 49 50 54 54 56 614	50 55 57 65 67 77 91
75.72 75.33 75.19 75.03 73.96	248.6 254.4	111.4 - 116.0 117.2	67.8 - 70.2 70.6	Bouty, 1889		×	
72.69 72.08 69.72 69.60	282.4 275.0	117.2	70.8 70.4		0,		941
64.78 63.76 63.28	207.6	103.6 96.0	62.6 59.2	78.44 75.04 71.89 70.41 69.03	539 623 529 490 461]] [5	1129 1005 991 957
Knietsch,	1901			64.00 59.70 52.63 47.06	611 1004 1895 2700	1 1 5	1124 1651 2975 4151
% (1+1)	capillarity	% (1+1)	capillarity	42.61 38.83	3350 3880 421) :	5061 5768 6337
0 9.5 18.7 27.8 37.3 46.4 55.9 65.2 74.4 81.5 86.1 86.8 89.2 93.8 96.3	100 95.29 90.58 85.88 82.35 76.47 71.76 65.88 61.17 55.88 51.76 51.17 49.41 44.70 42.35	97.7 98.6 100.3 100.9 101.9 103.4 104.4 106.8 111.2 113.2 113.2 115.6 118.1 122.5	40.58 40.00 38.23 38.23 37.64 37.64 36.47 36.47 35.29 35.29 32.94 29.41 25.88 24.70 23.52	35.71 33.05 30.70 27.03 23.85 21.74 19.80 18.18 15.62 12.90 10.00 8.16 6.40 5.26 3.87 1.97 0.794 0.398	431 465 487 509 520 523 520 510 481 425 354 299 242 201 151 78	076295532003326550883	6337 6756 7019 7247 7343 7377 7307 7077 6647 5845 4812 4037 3521 2695 2013 1040 452 237

Knietsch,				Kunzler an	d Giauque, 1952 U	<u></u> (1+1)	u .
%	-	%	<u> </u>	76 (1+1)			
40.19 48.80 53.27 57.54 60.28 61.07 64.0 65.14 67.04 68.53 69.12 70.23 70.84 73.4 75.1 76.73 78.45 78.52 79.55 80.22 80.98 81.27 81.345 81.425 81.425	4250 3450 2900 2320 2100 1900 1670 1500 1350 1310 1342 1350 1419 1430 1258 1255 1250 886 512 455 370 286 238	81.53 81.535 81.59 81.695 81.74 82.4 83.44 84.2 84.7 85.2 86.3 87.05 88.3 89.0 90.5 90.8 91.6 92.7 93.4 94.4 95.4 96.35 96.87 98.16	175 175 134.2 163 187 412 455 464 464 439 340 247 150 65.8 42.7 18.9 11.4 4.55 3.74 1.30 0.790 0.250 0.150 0.016	102.66 102.35 101.72 101.37 101.03 100.71 100.39 99.97 99.78 99.91 99.22 98.65 98.01 97.38 96.77 96.13 96.05 95.51 95.30 94.59 93.20 92.49 91.16 90.48 89.20 88.61 87.96	25° 0.3247 .3255 .3278 .3288 .3299 .3317 .3327 .3370 .3358 .3363 .3353 .3366 .3406 .3402 .3447 .3489 .3499 .3526 .3549 .3594 .3647 .3703 .3764 .3823 .3881 .3946 .3996 .4068 .4133 .4184	85.39 84.77 84.20 84.20 83.59 82.99 82.40 81.74 80.19 79.33 78.26 77.30 76.19 75.08 77.30 76.19 75.84 72.49 71.05 66.12 62.68 52.58 46.301 29.075 27.35 27.35 27.35 29.075 27.35 21.	0.4384 .4420 .4430 .4442 .4464 .4482 .4491 .4507 .4515 .4528 .4570 .4602 .4627 .4674 .4726 .4787 .4940 .5117 .5360 .5777 .6262 .7149 .7742 .7877 .8228 .8616 .8897
Thomsen, 1	870, 1871 and			87.96 87.35 86.71	.4237 .4285	13.192 10.775 10.127	. 8917 . 9113
	mo1 %	U		86.03	.4346 ~20		.9142
	16.5 9.1 4.8 2 1 0.5	0.545 0.700 0.821 0.918 0.956 0.977		75.177 71.96 69.66 65.86 62.51 58.14	0.4400 .4519 .4636 .4827 .5020 .5302	54.17 49.040 43.156 37.333 30.662	0.5537 .5900 .6343 .6834 .7346
Knietsch,	1901						
%	<u> </u>	*	U				
76.8 78.4 80 80.0 81.5 82 83.46 84 85.48 86 87.13 88 88.75 90.1 90.73	0.3691 .3574 .3574 .3574 .3478 .3478 .3417 .340 .3391 .340 .3392 .350 .3498 .360 .3599 .3660	91 92 93 93.3 94.64 95 96.52 97 97.99 98 99 99.8	0.370 .400 .425 .4325 .455 .4730 .495 .535 .5598 .590 .6526 .650 .710 .7413				

Knietsch, 19	01			Sulfu	ric a	cid (H ₂ :	SO ₄) +	Sulfur t	rioxide	(SO ₃)
%	Q mix	%	Q mix							
50 51 52 53 54 55 55 56 57	50 39 76 146 51 41 77 152 52 44 78 160 53 46.5 79 168 54 49 80 178 55 51.5 81 188				inskii	, 1956 20°	40°	p 60°	80°	100°
557 558 59 61 62 63 64 65 66 67 68 70 71 73 74 75	49 51.5 54 57 59.5 62 65 68 72 75 83.5 88 108 113 119 126	81.63 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97	193 199 210 223.5 237.5 250 265 278 292 308 325 344 363 381 401 421 442 465	5 10 15 20 25 30 35 40 45 50 60 70 80 90 100	**************************************	0.0017 0.012 0.06 0.24 0.80 2.02 cryst." 52.6 88.3 129.7 163.9	18.9 35.4 58.4 88.0 167.9 274 401.5	0.07 0.36 1.44 4.81 13.5 62.6 110.7 175.4 256 467 743	0.31 1.48 5.46 16.8 43.7 90:2 180.4 304 464 659	1.19 5.23 17.85 50.9 124.1 242.5 462 745
74 75	133 139	99 100	490 515	×		120°	140°	р 160°	180°	200°
Morgen, 1942 mol %	Omix	mol «	Omiv	5 10 15 20 25 30		4.06 16.45 52.3 139.5 319.5	12.2 46.15 137.2 353 747	33.1 117.3 329 783	82.3 274.5 729	191.0 602
				30		594	-	-		-
2 4 5 7 10 15 20 25 30 35 40	Q mix mol % Q mix 780 50 10590 1510 52 10450 1890 55 10100 2620 60 9370 3650 65 8520 5150 70 7680 6630 75 6610 7800 80 5480 8790 85 4250			Luchi		, 1940 mol %	(fig.)	b	.t.	
35 40 45	9470 10000 10410	90 95	3000 1000	ļ	L					
	10410	2 22		1	50 20 11.5 8.3 5.7 2.9 1.97 0.99		50 49 44.4 41.2 37.1 32.4 25.9 17.4	1 1 2 2 2 2 2 2 2	55 60 80 00 20 40 60 80 08	

Knietsch, 1901				Robles and	Moles, 1934	_	
8	f.t.	%	f.t.	M (1+1)*	f.t.	M (1+1)*	f.t.
	H ₂ SO ₄	+ S0 ₃		11	in the system	:	
0 5 10	+10.0 + 3.5 - 4.8	55 60 65	+18.4 + 0.7 + 0.8	H ₂ SO ₁ +	H ₂ SO ₄ . SO ₃		
15 20	-11.2 -11.0 - 0.6	65 70 7 5	+ 9.0 +17.2		f.t. H ₂ SO ₄	= 10.50°	J
20 25 30 35 40 45 50	- 0.6 +15.2 +26.0 +33.8 +34.8 +28.5	80 85 90 95 100	+22.0 +33.0 +34.0 +36.0 +40.0	0.148 0.196 0.420 0.466	10.174 9.969 9.453 9.149	0.995 1.000 3.320 5.040	7.525 7.601 -1.07 -7.30
				g.	f.t.	%	f.t.
					a) H ₂ 0 + F	I ₂ SO ₄ funing	
50	1 %	f t - 82 -109 3 - 97 - 52		1.28 1.48 1.54 1.76 2.76 2.95 3.30 3.34	10.03 9.94 9.902 9.827 9.48 9.32 9.221	4.33 4.39 5.18 5.65 5.87 7.20 8.25 9.08	8.76 8.89 8.485 8.28 8.37 7.834 6.90 7.775
16	· 7	- 20 - 1			b) H ₈ SO ₄	$1.50_3 + H_2SO_4$	
Wasif, 1955	m *	+ 10		1.375 1.420 1.838 2.20 3.12 3.28 3.71 4.07	10.154 10.223 10.075 9.980 9.822 9.596 9.353 9.453	7.50 9.65 9.70 10.50 13.50 16.60 19.95 23.30	8.259 7.525 7.601 7.250 5.975 5.295 3.995 2.87
<u></u>	0	f.t. 10.38		4.68 5.45 6.32	9.150 8.899 8.532	27.75 32.00	1.90 0.45
	0.04 0.08	$\begin{array}{c} 10.28 \\ 10.18 \end{array}$			c) H_RSO_{μ} , S	0 ₃ + H ₂ SO ₄ ol	
	sulfur tri	oxide in 100	0 g	1.313 1.54 2.27 2.866 3.28 4.74 5.611 7.70 8.977 9.65 11.65 12.19 14.70	10.05 9.92 9.62 9.45 9.23 8.65 8.50 7.45 7.35 6.76 5.85 5.70 4.83	15,79 17,70 20,84 21,50 24,50 25,47 27,90 30,26 32,00 35,97 40,43 45,45 50,25	4.82 3.83 3.40 2.60 1.55 2.00 0.19 0.65 -1.07 -1.00 -2.30 -4.80 -5.90

Chapman and	d Messel, 1885			Gillespie and Wasif, 1953	
%	d	%	<u> </u>	m η	
8.3 30.0 40.0 44.5 46.2 59.4	26 1.842 1.930 1.956 1.961 1.963 1.980	.6° 60.8 65.0 69.4 72.8 80.0 82.0	1.992 1.992 2.002 1.984 1.959 1.953	25° 0.0190 24540 0.0470 24540 0.2250 24570 0.3550 24660 0.5360 24740 0.6920 24780 0.8350 24820 m = moles (1+1) in 1000 g	
Gavelle, 1	913			sulfuric acid .	
%	d	%	đ	-	
	20)°		- Wasif, 1955	
0.58 3.54	1 . 8427 . 854 5	19.86 24.48	1.9120 .9275	m* t н.10 ³	
3.54 10.26 13.51 16.97	. 8799 . 8913 . 9022	27.06 30.17	.9352 .9451	0 10.38 105 0.04 10.28 115 0.08 10.18 120	
Gillespie a	and Wasif, 1953	3		*m : moles sulfur trioxide in 1000 g sulfuric acid .	
	m	đ			
	25°			Hetherington, Hub and al., 1955	
(0.0190 0.0470	1.8270 .8280		m × m ×	
	0.2250 0.3550 0.3550 0.5360 0.6920 0.8350 m = moles (1+1 sulfuric ad			25° 0.6118 223.3 0.1596 138.5 0.5942 221.0 0.1538 137.1 0.5458 213.6 0.1480 135.9 0.4800 203.1 0.1322 131.8 0.4008 189.3 0.1160 127.9 0.3182 173.5 0.1040 124.0 0.2872 167.0 0.0854 120.1 0.2526 159.8 0.0698 116.1	
Dunstan an	d Wilson, 1908			0.2310 154.9 0.0544 112.4 0.2132 150.9 0.0386 109.1	
·	%	η		0.1954 146.9 0.0226 106.4 0.1788 142.4 0.0000 104.5 0.1660 139.7	
	70.0 46.0 40.6 27.72 21.5 16.3 0.0	11470 17910 20450 17530 14880 13830 8320			

									
Water + 1	Pyrosulfur	ic acid (H ₂ S ₂ O ₇)		H ₂ O + Sulfi	uric acid (H	₂ S0 ₄)		
Gillespi	e and Wasi	f, 1953			Heterogeneo	us equilibria	1		:
ma	ж	m _a	н		Vapour pres	SIITA			
	2	5°		,	rapour pres				
1.5630 1.1520 0.9944 .8101 .6195 .4671 .3496 .2863	347.7 330.9 320.5 304.0 282.6 255.4 230.3 212.7 190.3	0.0661 .0617 .0571 .0509 .0431 .0401 .0335	$115.4 \\ 113.2$		Tate, 1863 Vapour press	sure : only h	istorical va	lues	
.2075	190.3 176.7 161.6	.0237 .0216 .0182	110.9 109.2 107.7		Tammann, 18	85			
. 1298 . 1043 . 0935	149.3 145.4	.0134 $.0110$	106.7 104.7						
.0803 .0752	138.7 137.0 133.5	.0062 $.0032$	104.4 104.1		%	p 100°	<u>"</u> S	р	
.0710	133,5	.0000	103.3		11.18 15.57	723.6 702.8	38.49 40.91	494.5 461.2	
m _b	н	m _b	х		27.05 30.67	622.5 586.9	41.69 43.61	448.4 420.4	
	2	25°		. د نیر ها در در می میاب می مده می است	33.69	554.2	48.01	367.1	
0.7859 .6659 .5603 .4541 .3607 .2675	759.1 699.3 638.1 567.6 496.0 413.3	0.0535 .0445 .0392 .0300 .0275	154.0 140.9 132.6 120.8 119.6 118.1	:	Muller and	Erzbach, 188	35		
.1746 .1442 .1149	413.3 312.8 275.8 238.5	.0257 .0197 .0153 .0100	111.4 109.8 105.3		%	t	* p rel	p ¹⁵	
.0946 .0740 .0635	210.5 183.2 167.3	.0068 .0060 .0000	105.1 140.8 103.3		0.0 19.9 21.4 25.4 28.1	19.5 16.25 15.5 13.65	0.89 0.87 0.82 0.76	12.79 11.38 11.13 10.49 9.72	
m _a	н 		m _b	н	31.1 35.2 39.1	12.25 15.00	0.70 0.66	8,95 8,44	
0.0516 0.0367 0.0218 0.0072 0.0000 m _a = ma	68.4 62.5 58.7	1 5 7)	0.0064 0.0200 0.0363 0.0678 0.0990 0.1472 m _b = mola	59 9 68.1 82 6 113 9 144 7 188.2 lity of H ₂ 0	43.4 48.36 53.6 57.8 61.7 64.1 66.3 68.2 70.0	15.5 14.5 14.5 14:25 13.65 13.25 13.5 10	0.59 0.49 0.39 0.28 0.195 0.15 0.09 0.08 0.057 0.045	7.55 6.27 4.99 3.58 2.49 1.94 1.15 1.02 0.73 0.58	
					*p water a				
					p ¹⁵ = vape	our pressure	interpolate	d at 15°	
				!					===

Helmholtz, 1	886			%	40°	p 45°	50°
t	р	t	p	 			
0.0 4.0 7.3 12.2 15.2	8.33 m 3.2233 4.2719 5.3144 7.4008 8.9930	19 9 24 7 28 6 33 2	12 083 16 213 20 407 26 603	44 46 48 50 52 54 56 60 62 64 66 68 70 72	28.1 26.3 23.9 21.4 18.9 16.5 14.2 12.0 10.0 8.1	37.4 33.6 30.5 27.4 24.1 21.1 18.5 15.8	48.3 44.4 40.1 35.9 31.5 27.8 24.1 20.4 16.9
0 4.2 6.5 8.5 13.0 14.8 16.4	3.775 5.084 5.969 6.834 9.231 10.345 11.419	20.3 24.5 29.2 39.0 48.0 50.0	14 · 635 18 · 899 24 · 972 43 · 282 69 · 208 79 · 592	62 64 66 68 70 72 74 76 78 80 82	8.1 6.5 5.4 4.5 3.2 2.6 2.1	18.5 15.8 13.0 10.5 8.2 6.5 5.4 4.4 3.6 3.1 2.1	13.9 10.9 8.9 7.2 5.9 4.8 3.9 3.0 2.4
Lunge, 1889	(abstract in	Sorel, 1889	9)	80 82	$\begin{smallmatrix}1.3\\0.9\end{smallmatrix}$	1.6	1.9 1.4
2	10°	p 15°	20°	%	55°	p 60°	65°
44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82	4.4 4.0 3.7 3.3 3.0 2.6 2.2 1.9 1.6 1.2 1.1 0.8 0.7 0.5 0.4 0.3 0.1	6 1 5.5 5.0 4.0 3.6 2.1 1.6 1.4 1.0 0.8 0.4 0.3 0.1	8 5 7 7 7 1 6 5 5 8 5 0 4 3 3 5 3 0 2 2 2 1 .8 1 .3 1 .0 0 .5 0 .5 0 .4 0 .3 0 .2	46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82	59.6 53.5 47.4 41.5 36.2 31.0 26.1 21.6 17.7 14.0 11.5 9.5 7.5 6.0 4.9 4.0 3.0 2.4	76.5 69.0 61.3 54.0 47.2 41.6 34.5 28.7 15.2 12.3 9.5 7.5 6.0 4.8 3.5 2.9	96.4 86.8 77.0 67.9 59.9 51.6 44.0 36.7 30.0 23.9 19.1 15.4 12.0 9.5 5.9 4.0 3.3 2.3
%	25°	9 30°	35°	%	70°	р 75°	80°
44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 78 80 82	11.5 10.5 9.6 8.8 7.9 7.0 6.0 5.1 4.3 3.6 3.0 2.5 2.1 1.4 1.2 1.0 0.8 0.6 0.5	15.5 14.5 13.0 10.9 9.1 7.1 5.0 4.0 3.0 2.0 1.7 1.1 0.8	20.9 19 7 18 1 16 4 14 5 11 0 9.15 6.5 5 4.5 3.8 3.8 3.8 2.1 1.4	48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82	107.2 95.6 84.5 74.8 65.0 55.4 46.1 37.7 30.3 24.2 19.4 15.5 12.0 9.5 7.5 5.7	132.1 118.1 104.5 92.6 80.6 68.4 56.7 46.2 37.4 30.3 24.4 19.8 15.4 9.5 7.5 5.0 3.2	-152.0 131.2 116.1 100.9 86.2 72.3 59.7 48.0 39.0 31.4 25.5 20.0 15.4 11.8 8.5 6.2 3.9

WATER + SULFURIC ACID

%	p			Cumming, 1903			
	85°	90°	95°	t	p	t	p
50 52 54 56 58 60 62 64 66 68	192.6 166.5 146.8 128.2 110.6 94.0	236.7 207.9 183.5 160.0 138.5 118.7	251.5 222.0 195.0 169.5 146.0	19.4 20.1 25.9	8.0 8.1 11.9 34.5	29.8 30.8	15 0 16 0
62 64	78.2 63.8	100.7 83.7	125.0 105.0	14.2 24.2	8.9 15.1	27.9 30.7	19.1 22.7
66 68 70 72 74 76	52.5 42.5 33.9 26.2 19.5	70.0 56.0 44.4 33.7 24.5	88.0 72.0 57.0 43.4 31.5 22.0	Burt, 1904			
78	15.0 10.5	18.5 13.0	15.8	tt	p	t	p
80 82	7.5 4.7	9.3 5.6 	11.0	55 60 65 70 75 80	95.5 120.7 153.7 192.7 240.2 295.1	85 90 95 100 104.80	363.3 439.1 532.6 640.8 759.6
Dieterici, 1898	(fig.)			55	30.4 86.8	85	332.8 403.4
M	р	М	р	55 60 65 70 75 80	111.0 140.6 176.6	90 95 1 0 0	488.2 589.9
	20	0		75 80	219.8 271.3	107.11	762.7
0 0.607 1.040 1.903 2.681 3.792 4.908	4.579 4.535 4.453 4.284 4.065 3.664 3.238	5.598 8.164 9.430 11.69 16.19 22.18	2.952 2.077 1.679 1.206 0.569 0.164	55 60 65 70 75 80	35.5 78.2 100.1 126.8 159.5 199.0 245.0	4 % 85 90 95 100 105 109.56	301.5 366.0 445.4 537.7 646.2 757.2
Smits, 1900				60 65 70 75 80	84.2 107.4 136.5 171.6 211.8	90 95 100 105 110	317.2 386.0 455.8 560.2 670.2 749.4
	P		p	85	261.3 48.3	113.21 7 %	749.4
0 0.02090 0.04968 0.24960	0° 4.579 4.57564 4.57081 4.53696	0.50418 1.11431 2.1795	4.49187 4.36843 4.13654	60 65 70 75 80 85 90	59.8 79.0 100.4 125.4 157.8 195.9 241.2	95 100 105 110 115 120.82	293.5 355.6 429.8 515.4 621.9 754.0
Knietsch, 1901				60 65 70 75 80	54.2 44.1 57.3 74.0 94.1 118.1	100 105 110 115	267.4 325.5 391.9 470.9 561.8
% 20°	р 40°	60° 80°	100°	85 90 95	146.9 182.9 223.8	125 128.7	552.6 753.7
61.7 3	10	25 68 8 22	143)	62.8	•	
61.7 3 70.9 2 81.4 1 89.23 0 90.98 0	3 1 0 0	8 22 1.5 3 0 0	$\begin{array}{ccc} & 10 \\ & 1 \end{array}$	70 75 80 85 90 95	35.4 45.9 58.0 73.6 92.3 115.8	110 115 120 125 130 135	210.8 255.3 308.0 368.5 438.3 517.6
				100 105	140.0 171.5	140 145. 8 5	612 8 745 0

	70.78 %			
90 95 100	35.5 135 44.8 140 57.0 145	291 . 2 355 . 4	Hacker, 1912	
105 110	71.0 150 89.0 155 140.4 160	426.9 501.5	t p	t p
120 125 130	71.0 150 89.0 155 140.4 160 171.3 166.47 205.2	589.0 740.05	22.03%	32.59%
	74.36 %		1st series	1st series_
120 125 130 135	80.8 140 99.5 145 120.4 150 146.9	178.4 221.0 260.7	29.90 26.98 33.70 28.39 38.59 43.90 49.85 79.28 50.00 79.98	39.80 39.74 50.55 69.93
110	77.26 %		11 50.05 80.15	59.70 109.25
110 115 120	35.1 155 44.8 160 56.1 165	229.7 273.9 326.6	58.25 119.22 2nd series	" 109.02
125 130	69.3 170 85.5 175 105.1 180 127.7 185 156.4 189.87	387.1 454.3	49.15 77.35	71.40 182.48 80.37 269.83
135 140	$ \begin{array}{ccc} 105.1 & 180 \\ 127.7 & 185 \end{array} $	525 7 610.8	49.35 77.33 59.20 125.35	2nd series
145 150	156.4 188.9	748.3		
	78.50 ≴		39.25 85.52 39.45 86.06 69.80 202.67 80.75 324.02 81.45 325.33	59.25 107.32 59.4 107.46
115 120	37.7 160 47.7 165	235 2 276.8	69.80 202.67	59.25 107.32 59.4 107.46 59.65 108.27 79.65 262.37
125 130	58.2 170 71.8 175 87.4 180	329.8 385.7	80.75 324.02 81.45 325.33	79.65 262.37
135 140	87.4 180 108.0 190	445.8 597.2		
145	133.2 195	489.4	35.01%	41.54%
150 155	163.7 198.35	7 56.8	1st series 30.45 22.25	32.65 19.88
135	81.15 ≰ 52.8 155	124.6	1 20 50 11	22 80 20 02
140 145	65.3 160	150.4	39.55 47.14	40.15 30.48 " 30.46
150	101.7 170	180.9 218.9		47.90 46.25 " 46.20
140	85.14 % 31.5 190	227.0	11 50 05 63 77	49.45 50.28 60.80 88.10
145 150	39.6 195 51.3 200	227.9 269.5	50.10 63.92 60.15 104.59 2nd series	tt 88.29
155	63.4 205	307.4 361.3	59.95 103.42	47.49%
160 165	77.6 210 94.1 215	424.6 495.2	69.90 161.63 70.8 170.78 81.85 272.2	, and the second
170 175	$ \begin{array}{ccc} 115.0 & 220 \\ 137.9 & 225 \end{array} $	577 . 8 670 . 3	3rd series	31.65 14.27
180 185	164.2 194.1	752.9	40.05 37.33 " 37.24	31.90 15.16 40.05 23.19
	86.61 4		3rd series 40.05 37.33 " 37.24 48.15 57.39 48.20 57.51 49.60 61.54 59.8 101.23 71.07 171.35	40.15 49.90 23.29 39.64
150 160	57.7 180	115 6 126 6	49.60 61.54 59.8 101.23	49.95 38.94 60.40 67.80
165 170	71.2 185 87.3	150.4	71.07 171.35	" 67.69 60.50 67.89
155	31.8 185	102.3		07.07
160	38.9 190 48.5 195	120.5 145.2		
165 170	59.4 200	1 71 .5		
175 180	72.4 205 87.3	205.3	1000	
180	91.01 % 45.5 210	138.2	Hartung, 1920	
185	55.6 215	163.2	% p	% p
190 195	67.9 220 82.2 225 98.1 230	190.3 223.6	30),10°
200 205	98.1 230 115.9	263.5	0.00 31.73 0.60 31.66	5.31 31.09 8.63 30.58
205	95.94 %	72.2	1.94 31.51	11.79 30.02
205 210	34.1 225 40.8 230	85.9	3.38 31.34	17.63 28.71
215	50.1 235	106.0		

Daudt, 1923	3			Eber	t, 1930				
t	p	t	р	%	0°	20°	25°	30°	
+ 15.4 + 7.7 + 0.3 - 3.3 - 8.8 - 12.7 + 17.5 + 6.0 + 2.0 0.0	0.2825 0.0953 0.0645 0.0515	15.7 - 15.7 - 23.4 - 30.5 - 37.5 - 44.5 - 45.3 - 484gr \$ - 5.0 -11.5 -17.0 -25.3	0.0502 0.0274 0.0358 0.0070 0.0045 0.0032 0.0329 0.0190 0.0124 0.0060	0 10 20 30 40 50 60 70 75 80 85	4.58 4.40 4.05 3.40 2.55 1.50 0.65 0.10	17.54 16.95 15.30 13.10 9.70 6.75 2.80 0.75	23.76 22.75 20.90 17.85 13.45 8.50 4.00 0.95 0.40 0.15	31.82 30.75 27.85 23.65 18.30 12.00 5.65 1.75	
- 1.5 + 22.0 + 17.3 + 14.0 + 11.0	0.0472 82 0.0600 0.0396 0.0291 0.0226	.31 gr % + 7.5 - 6.0 - 2.3 - 8.3	0.0160 0.0145 0.0079 0.0049	Ure	and Youn	g, 1933			
. 11.0		- 0.3 .00 gr%	0.0047		t	р	t	p	
17.7 16.0 13.8 12.0 8.7	0.0226 0.0187 0.0154 0.0141 0.0097	6.0 4.5 2.1 0.2	0.0087 0.0079 0.0064 0.0060		24.41 24.87 29.90 30.00 34.40 34.45	29.99 17.0 17.8 23.7 24.1 31.0 30.7 41.1	69.85 74.83	179.0 221.1 270.7 341.9 408.1 491.0	
Mc Haffie,	1927	p			39.69 44.90 49.71 54.91 59.72 64.59	41.1 54.5 69.6 89.9 112.9 141.7	85.32 89.92 94.78 99.71 104.44 110.06 113.85 119.33 123.06	590.7 699.2 845.1 964.4 1155 1296	
Hepburn, 19	25 65.9 76.0 79.4 83.5	1.796 0.297 0.158 0.082			25.82 31.44 36.20 45.88 50.51 55.44 57.32 63.11 69.69	38.23 15.0 21.1 27.5 46.3 59.2 74.8 82.4 108.4 146.5	76.29 82.71 86.09 90.67 96.51 103.13 110.80 123.64 129.25	195.4 255.4 292.1 351.5 440.3 561.1 737.7 1133 1344	
						43.3	6%		
41.81 43.79 45.04 45.59 47.46	p 25 12.38 11.49 10.80 10.49 9.46	49.45 51.45 53.24 55.23	8.44 7.67 6.71 5.79		25.20 29.95 36.53 39.99 44.67 49.72 54.17 59.12 64.75 69.76 74,79	12.0 15.6 23.2 28.0 36.2 47.0 59.2 75.6 97.7 123.7 154.3	79.98 84.39 90.16 94.86 99.73 104.76 109.92 115.56 119.16 124.25	193.0 231.6 293.9 353.1 423.0 511.9 614.8 743.3 844.9 996.4	

26.04 32.81 41.61 46.58 51.18	10.1 14.9 24.9 32.4 41.5	84.19 89.41 94.75 99.23 104.81	191.8 237.5 296.1 349.3 430.3	Tarase	nkov, 1955	p		
55.29 61.60 69.83 74.53 80.04	51.0 69.8 102.4 126.4 160.8	109.64 114.26 121.27 129.11	513.6 602.7 766.1 990.7	0 10 20	10.02% 4.08 8.17 15.82	20.40% 3.42 7.23 15.32	29.849 2.91 6.06 12.73	34.74% 3.05 10.99
24.49 29.69 34.48 39.93 44.50 50.15 54.29 59.40 64.57 70.17 74.42	7.01 9.60 13.0 17.4 22.4 30.7 37.9 49.4 63.6 83.4 102.2	79.65 85.05 90.29 94.96 100.43 105.37 109.20 115.53 119.75 125.98	127.0 159.8 199.9 139.8 298.5 361.2 412.8 523.0 601.2 750.6	25 30 35 40 45 50 55 60 65 70 75 80 85	21.8 28.6 38.8 50.3 66.6 85.6 110.9 135.4 217 273 334	20.8 27.1 37.3 47.4 62.0 79.7 102.4 130.0 163.9 204.1 256.2 313.8	17.4 21.9 31.3 39.9 53.5 68.9 89.4 111.5 143.2 179.0 227	36.3
25.11 33.95 40.58 45.05 49.77 55.19	4.82 8.40 12.4 16.1 20.1	85.16 89.87 95.06 100.15 104.10	114.3 139.5 172.9 211.1 246.2	90 95 100	408 502 608 718	385.0 469.9 566.5 662.2	337 415 502 591	
55.19 59.95 65.01 70.13 74.95 80.22	28.0 35.5 45.6 58.3 72.7 92.2	109.66 114.99 120.74 125.42 130.20 135.61	303.9 370.1 453.2 533.8 630.0 752.8	0 10 20 25 30 35 40	39.90% 1.79 4.07 7.60 10.90 15.17 21.5 29.8	48.44% 1.44 2.98 7.00 9.53 12.32 16.79 21.5	54.62% 1.13 2.20 4.21 6.22 8.33 11.20 15.26	56.06 % 0.975 - 4.20 5.55 7.43 9.61 13.40
29.72 34.99 39.59 44.66 49.77 54.91 59.98 64.36 69.86 74.52 79.19	2.89 4.29 5.37 7.58 10.16 13.74 18.02 22.7 29.8 37.6 46.9	84.72 90.16 94.71 100.20 104.56 109.96 114.74 119.13 124.41 129.46	60.6 77.4 93.9 118.5 141.3 174.9 210.6 247.8 301.2 361.1	45 50 55 60 65 70 75 80 85 90 95 100	39.8 52.5 68.4 88.3 112.2 141.1 178.2 220 272 332 411 525	29.2 37.4 49.1 62.7 80.1 101.0 129.7 159.6 197.5 243 296 346	20.1 26.8 34.7 44.8 57.7 72.8 91.6 114.4 142.5 175.9 214 258	17.66 23.7 31.0 40.1 51.6 65.2 82.2 103.7 127.9 160.3 196.6 231.8
Hornung and	Giauque,	1955		0 20 40 60	62.7 0.52 2.18 7.71 23.5	5	68.34% 0.225 1.05 3.80 11.98	71.63% 0.125 0.577 2.19 7.05 21.0
11	p	<u>t</u>	р	100	$\substack{60.0\\146.4}$		31.5 79.9	54.1
23.17 24.53 25.00	4.252 4.627 4.795	.004 mol % 34.47 47.56	8.686 18.528	0 20 40	74.5 0.06 0.32 1.28	5 6	77.83% 0.032 0.176 0.730	83.28% 0.007 0.052 0.202
27.67 29.18 .34.72	2.821 3. 102 4.443	44.51 54.07	8.061 13.895	60 80 100	4.50 13.49 35.5		0.730 2.55 7.89 22.0	0.783 2.84 8.45
25.00 42.05 52.78	0.618 1.980 3.878	63.09 71.84	7.027					

Luchinskii	, 1956					Gluec	kauf an	d Kitt, 1956			
%	20°	40°	р 60°	80°	100°	М	р	osmotic coefficient	M	р	osmotic coefficient
0 10 20 25 30 40 50 55 60 65 70 75 80 85 90 94 96 98.3	16.25 14.9 14.0 13.0 10.4 7.22 5.40 3.69 2.25 1.19 0.53 0.18 0.04 0.004 0.00024 0.00005	54.4 50.0 45.9 40.0 32.2 40.0 32.2 4.5 17.25 12.05 4.22 1.93 0.72 0.19 0.000 0.0000 0.000025 0.0025	0.0024		760 704 650 610 567 465 338 265 195.5 132.2 81.6 44.2 19.9 7.06 1.28 0.15 0.05 0.093	0 1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 22 24 28	23.756 22.84 21.68 20.23 18.527 16.705 14.86 13.08 11.43 9.93 8.58 6.36 4.70 3.46 2.55 1.89 1.40 0.78 0.78	3 0.721 0.846 0.991 7 1.150 1.303 3 1.445 6 1.576 1.1793 1.1884 2.030 5 2.140 0.2.228 2.222 1.2.341 0.2.382 2.407 6 2.426	34 36 38 40 42 44 46 48 50 52 54 56 62 64 66 68 70	0.273 0.214 0.1694 0.1369 0.1112 0.0908 0.0750 0.0523 0.0442 0.0378 0.0328 0.0320 0.0240 0.0209 0.0184 0.0162 0.0144 0.0162	2.127 2.099 2.071 2.043 2.016 1.990
%	120°	140°	р 160°	180°	200°	30 32	0.45	4 2.441	74 76	0.0101 0.0092	1:938
40 50 55 60 65 70 75 80 85 90 94 98, 3	947 697 550,5 411 284 180,0 101,2 48,2 18,6 3,78 0,52 0,18 0,125 0,93	802 564 366 213.2 106.8 44.3 10.0 1.54 0.57 0.40 2.87	697 421 220 97.25 24.2 4.14 1.63 1.17 7.92	774 424 199.2 54.0 10.2 4.22 3.09 20.1	778 387 113.5 23.4 10.1 7.65 47.5	Boswe Dp/pc 0.99 0.92 0.73 0.56 0.38 0.28	90 25 38 69 32	Cantelo, 1922 N 30.000 23.800 16.700 13.700 10.900 8.100	0.188 0.096 0.068 0.045 0.019 0.007		N 6.200 4.200 3.000 2.100 0.950 0.470
%	b.t.		%	b.	t.						
0 5 10 15 20 25 30 35 40 45 50 52	100.6 101.6 102.6 103.1 104.5 105.8 107.7 110.6 113.2 117.2 122.7 125.1)) 3 3 7 7	55 58 60 62 65 68 70 72 75 78 80 82	13 13 14 14 15 16 16 17 19	9.6 4.5 8.3 2.4 9.3 6.8 2.8 9.1 9.2 8.4	0.0 0.2 0.3 0.5 0.6 0.8	* 273 241 815 649 636 892	Dp 0.600 2.010 2.640 4.690 5.470 7.910 9.950 1 1. water .	1.28 1.67 1.77 2.00 2.46 2.87	1 2 9 8	Dp 11.930 16.640 17.860 20.860 26.980 33.370
						i	eley, Ha	rtley and Bur Po/p	ton, 19	19	Po/p
					•		1.92 3.34	1.21147 1.17019	5.8 5.8		1.02565 1.02517

1						
Rayleigh, 1902		b.t.)	Pickering, 1	f.t.	%	f.t.
75	V L 0 90 0.1 93 1.6 Az = 98.3 \$	7,1 12,8	101.0243 100.8171 100.6403 100.6038 100.4243 100.2121 100.0953 100.0000	+ 6.653 + 7.419 + 8.089 + 8.379 + 9.179 + 9.849 +10.155 +10.352	83, 3212 82, 8726 82, 0452 81, 8494 80, 5767 79, 8932 79, 0466 78, 9508	+ 7,829 + 7,309 + 5,934 + 5,441 + 2,217 - 0,25 - 4,486 - 4,773
Sheffer, Janis	and Ferguson, 1939		99.8826 99.7845 99.6007 99.4569	+ 9.617 + 9.121 + 8.053	77.9908 76.9899 75.8940	- 8.699 -15.199 -22.0
m ₁		tivity icient H ₂ 0	99.4369 99.4132 99.2896 99.2048	+ 7.091 + 6.786 + 6.130 + 5.648	69.136 65.065 60.085 56.892	-54.0 -39.0 -28.5 -25.0
4. 349 4. 348 3. 815 3. 154 2. 830 2. 184 1. 524 1. 269 1. 046 0. 8822 0. 733 0. 640 0. 520 0. 384 0. 286 0. 1883 0. 095 0. 045 0. 0183 m ₁ = molality (m ₂ = molality (m ₂ = molality (m ₂ = molality (m ₃ = molality (m ₄ =	5.255 4.229 3.728 2.770 1.859 1.486 1.201 0.9959 8. 0.8174 8. 0.7066 0.0.5675 8. 0.4158 6. 0.3089 2. 0.2031 8. 0.1041 8. 0.0508 8. 0.1041 9. 0.0508 9. 0.02423 9. 0.1041 9. 0.0508	.7531 .7936 .8404 .8628 .9023 .9367 .9500 .9598 .9669 .9729 .9766 .9813 .9863 .9898 .9934 .9966 .99830 .99918	99.0440 98.7913 98.7663 98.7663 98.7335 98.6457 98.5625 98.5346 98.1974 98.0316 97.4210 97.4218 97.0257 96.6970 96.1251 96.1171 95.5205 95.160 94.922 94.597 94.278 94.034 93.556 93.0343 92.027 91.100 90.566 89.822 88.9713	+ 4.649 + 3.032 + 2.673 + 2.679 + 1.900 + 1.591 - 0.413 - 1.676 - 2.883 - 4.345 - 7.744 - 8.087 - 10.407 - 14.501 - 13.686 - 13.686 - 23.5 - 23.5 - 24.75 - 23.5 - 24.75 - 28.09 - 31.0 - 33.0 - 33.0 - 33.0 - 33.0 - 33.0 - 32.0 - 20.0 - 12.736 - 10.202 - 5.776 - 0.576	55.128 49.725 44.504 39.951 38.490 37.662 37.422 35.993 34.978 34.874 32.577 29.930 27.583 25.787 21.8689 21.0042 19.9007 19.2284 18.0067 17.0076 15.9399 14.7681 13.4851 12.7720 91.9713 8,9868	-28.5 -36.7 -49.0 -68.0 -72.0 -71.0 -72.0 -35.5 -61.0 -56.5 -47.0 -35.5 -28.3 -28.3 -19.676 -18.075 -16.302 -14.996 -13.520 -12.700 -11.265 -10.269 -9.111 -7.056 -6.478 -5.855 -5.266 -4.602 -4.078
% f.t.	% f.t.	% f.t.	88,0355 86,7908	+ 2.768 + 5.585 + 6.667	7.9731 7.9072 6.9943	- 3.492 - 3.367 - 2.994
2.88 - 1.11 5.22 - 2.20 5.77 - 2.43 6.45 - 2.80 7.31 - 3.30 8.45 - 3.90 10.00 - 5.00 12.25 - 6.70 15.81 - 9.81 18.50 - 12.68 22.27 -17.60 25.00 - 21.59 27.35 - 26.40 30.00 - 33.00 31.21 - 37.10 32.30 - 41.6 32.80 - 43.8	34.40 -54.4 96 35.25 -61.7 96 74.30 -28.80 97 75.00 -24.70 97 75.97 -19.4 97 77.25 -12.30 96 78.40 -7.04 96 79.00 - 4.30 97 80.01 + 0.11 97 80.64 + 2.33 98 82.62 + 7.55 96 83.00 + 8.00 97 84.48 + 8.81 * 9 85.61 + 8.10 9	0.00 - 1.49 0.10 - 8.30 0.60 -11.67 1.60 -19.01 2.10 -23.65 2.80 -31.20 4.10 -30.01 4.60 -24.90 5.00 -21.02 5.95 -12.90 6.45 - 9.30 6.48 - 5.99 7.75 - 1.3 8.20 + 1.30 8.85 + 4.21 9.40 + 6.79	86.2186 85.6789 85.4458 84.9717 84.6055 84.0050	+ 8.029 + 8.115 + 8.468 + 8.513 + 8.404	5.9946 5.0023 4.1970 3.99342 3.0058	- 2.441 - 2.050 - 1.963 - 1.582 - 1.142
* (1+1)		============				
		1				

Thilo, 189	2 and Pictet,	1894		Biron, 1908			į
%	f.t.	%	f.t.	*	f.t.	%	f.t.
100 95.2 89.17 88.88 84.48 83.82 83.74 83.00	+10.5 -24.5 -47 -55 + 3.5 + 4.5 + 5	28 26.63 25.39 23.12 21.40 17.88 15.36	-40 -34 -26.5 -19 -17 - 8.5 - 6.5 - 4.5	57.64 68.9 71.2 72.6 73.15 73.8	-29.0 -44.6 -39.5 -39.0 -38.9 -39.9	74.8 74.8 76.3 76.6 77.0	-40.8 -39.0 -39.3 -39.4 -39.2
80.84 80.09 77.2 74.85 73.08 57.65 47.57	+ 2.5 + 1.5 -14 -41 -70 -40 -50	11.98 9.82 6.77 5.16 3.5 2.65 1.78 1.67	~ 3.5 0 + 2.5 + 3 + 4 + 4.5 + 3.5	Hulsmann, 1934	f.t.	E	
40.50 35.25 33.11 31.21 29.52	-65 -88 -75 -55 -45 (1+1)	1.58 1.50 1.34 0.54 0	+ 2.5 + 1.5 + 1 - 0.5	0 10.48 21.78 25.13 29.03 30.04	0 - 4.8 -18.3 -22.4 -32.7 -34.6	-72.3 -72.4 -72.4	
Jones and G	etman, 1902 f.t.	M	f t	31.65 34.16 34.91 35.23 35.69 35.96	-40.1 -50.7 -56.8 -56.4 -62.4 -64.8	-72.5 -72.4 -72.4 -72.4 -72.4	
0.1 0.2 0.3 0.4 0.5	-0.397 -0.817 -1.173 -1.593 -2.032	1.0 1.5 2.0 2.5	- 4 190 - 7 443 -11 296 -16 275	36.14 36.61 37.18 37.77 39.20 40.00 41.84 44.01	-65.3 -65.0 -67.5 -63.7 -57.3 -56.0 -54.2 -50.0	-72.3 -72.3 -72.5 -72.3 -62.2 -62.0 -62.0 -61.9	
Jones, 1904	and Jones and	l Basset, 190	05	46.74 49.41 50.22 50.84 54.38 55.85	-42.6 -37.5 -35.7 -34.8 -31.0 -29.1	-62.0 -54.0 -54.1 -53.9 -53.8 -53.5	
М	f.t.	М	f, t.	57.60 59.42	-28.7 -29.4	-47.1	
0.1 0.2 0.3 0.4 0.6 0.8 1.0	-0.397 -0.670 -1.156 -1.570 -2.440 -3.300 -4.189 -7.443	2.0 2.5 2.73 3.28 3.825 4.37 4.5 5.0	-11 296 -16 275 -21 000 -29 000 -41 000 -53 000 -58 000 -76 000	62.88 63.11 64.94 64.99 66.54 67.42 69.31 70.34 70.58 71.33	-33.0 -32.6 -36.7 -37.0 -42.2 -46.0 -45.2 -41.5 -41.3	-47.1 -47.2 -47.2 -47.4 -47.3 -47.1 -47.2	
Jones and Pe				71.38 71.98 74.08 76.31 78.89 78.97 84.49 89.75	-39.8 -33.4 -21.0 - 7.5 - 6.5 + 8.5	-47.2 -39.7 -39.7 -39.6	
M	f.t.	M	f.t.	92.88	- 3.5 -26.9	-35.2 -35.6	
0.010 0.025 0.050 0.075 0.10	-0.04872 -0.1179 -0.2182 -0.3157 -0.4043	0.50 0.75 1.00 1.50 2.00	-2.0033 -3.1174 -4.379 -7.263 -11.296	94.97 96.54 100.00 (1+1)	-24 -15.1 +10.49 (2+1) (4+1)	-35.5 -35.4 - (6+1)	(8+1)
=====				=			

Robles and Moles, 1934			Kunzler and	Giauque, 1952		
M (1+1)*	f.t.		- - - -	f.t.		f.t.
f.t. H ₂ SC 0.466 0.562 0.616 0.683 0.700 0.720 2.970 *M (1+1) in the system	$\begin{array}{c} 8.020 \\ 7.472 \\ 7.546 \\ 6.885 \\ 6.795 \\ 6.705 \\ \mathbf{-5.170} \\ 1: \ \mathbf{H_2SO_L} + \mathbf{H_2SO_L} \end{array}$	ю, . Няо	100.096 100.086 100.076 100.057 100.0386 100.0270 100.0193 100.0157 100.0121 100.0084 100.0047	10.083 10.123 10.157 10.227 10.2926 10.3270 10.3461 10.3539 10.3655 10.3657 10.3692 10.3709	99.9759 99.9699 99.9615 99.948 99.931 99.914 99.898 99.889 99.883 99.880 99.816	10. 3262 10. 2990 10. 2666 10. 1974 10. 1031 10. 0041 9. 899 9. 905 9. 806 9. 603 9. 407 9. 385
% f.t.	%	f.t.	99.9974 99.9936 99.9902	10.3705 10.3679 10.3626	99.789 99.557 99.276	9.216 7.80 6.17
	0 + H ₂ SO ₄		99.9866 99.9860	10.3561 9.894 (?) 10.3476	99.017	4.59 2.70
0.8534 9.802 0.9912 9.852 1.2631 9.430 2.0184 8.823 2.1628 8.757 2.3569 8.380 3.3761 7.638 3.6620 7.451 4.2416 6.730 4.3039 6.885	4.5374 5.1942 6.2198 7.1604 8.3465 11.771 12.285 14.337 16.397 18.846	6.705 5.88 5.81 4.20 2.98 0.75 0.03 -1.27 -2.97 -4.57	99.9830 97.847 97.490 97.090 96.622 96.222 96.061 95.591 93.382	2.79 - 2.79 - 5.13 - 7.82 -11.10 -13.95 -14.83 -16.89 -18.71 -31.47	95.311 95.062 94.513 94.260 94.010 93.835 93.806	-20.88 -22.92 -27.33 -29.56 -31.83 -33.38 -33.67
0.915 9.672 0.980 9.585 1.095 9.480 1.11 9.840 1.83 8.804 1.97 8.757	H ₂ SO ₄ fuming 2.20 2.48 2.82 2.96 3.52 4.44 H ₂ O + H ₂ SO ₄	8.802 8.381 7.872 7.770 7.472 6.795	93. 256 92. 412 92. 301 92. 214 91. 918 91. 583 91. 299 90. 832 90. 406 90. 288 89. 926 89. 482	-30.07 -22.58 -21.64 -20.91 -18.52 -16.00 -13.98 -10.86 -8.28 -7.58 -5.58 -3.30	84.570 84.518 84.469 84.419 84.371 84.323 84.276 84.006 83.435 82.824 82.412 81.888	+ 8.4803 + 8.4855 + 8.4886 + 8.4888 + 8.4870 + 8.4773 + 8.4686 + 8.3882 + 7.992 + 7.252 + 6.567 + 5.478
0.292 10.36 0.831 9.81 1.733 8.96 2.526 8.21 3.275 7.51 4.113 6.71 4.839 6.06 6.296 4.91 N.B. The authors give	7.653 8.974 10.442 11.973 13.746 15.481 17.348	3.68 2.56 1.51 -0.03 -1.29 -2.72 -4.09 her data	88.890 88.420 87.748 87.338 86.542 86.514 86.113 85.794 85.189 84.909 84.890 84.880 84.828 84.775 84.723	- 0.61 + 2.25 + 3.48 + 4.69 + 5.78 + 6.506 + 6.570 + 7.254 + 7.692 + 8.028 + 8.256 + 8.4016 + 8.4016 + 8.4028 + 8.4328 + 8.4328 + 8.4428 + 8.44613	81.850 81.783 80.947 80.154 79.446 78.921 78.329 77.745 76.643 76.193 75.990 75.786 75.339 74.788 74.550 74.410 74.309	+ 5.412 + 5.2412 + 5.243 + 0.18 - 2.70 - 5.14 - 8.03 - 11.28 - 18.02 - 21.06 - 22.50 - 23.98 - 27.38 - 31.62 - 33.76 - 34.80 - 35.68
			84.672	+ 8.4722	,,,,,,	

Wasif, 1955 (fig.)

, –		
m (water)	f.t.	
0 0.02 0.04	10.38 10.28 10.08	

Giauque, Kunzler and Hornung, 1956

mol %	f.t.	mol %	f.t.
73.14	-34.86	48.1	+ 8.005
71.5	-29.23	47.6	+ 7.740
69.0	-22.17	46.5	+ 6.840
66. 7	-16.05	45.4	+ 5.61
64.5	-10.81	44.4	+ 4.06
62.5	- 6.37	43.5	+ 2.22
60.6	- 2.60	42,5	+ 0.10
58.8	+ 0.53	41.7	- 2.27
5 7.1	+ 3.06	40.8	- 4.88
55.6	+ 5.07	40.0	- 7.70
54.0	+ 6.60	39.2	-10.73
52.6	+ 7.666	38.5	-13.97
52.1	+ 7.967	37.7	-17.41
51.5	+ 8.201	37.0	-21.03
51.3	+ 8.289	36.4	-24.82
51.0	+ 8.360	35. 7	-28.77
50.8	+ 8.418	35.1	-32.92
50.5	+ 8.4576	34.5	-37.20
50.2	+ 8.4819	-	- E $(1+1)$ + $(2+1)$
50.0	+ 8.49	34.12	-39.86
49.8	+ 8.4821	33.9	-41.64
49.5	+ 8.4590	33.3	-46.21
49.3	+ 8.4208	-	- E (1+1) - (3+1)
49.0	+ 8.366	32.57	-52.85
48.8	+ 8.212		

Properties of phases . Density .

The data of the following authors, on density, are only of historical value or not accurate enough . The Standard work on density is that of Domke and Bein, 1905 .

Delezenne, 1826 Anthon, 1836 Bineau, 1848 Wiedemann, 1856 Graham, 1861 and 1862 Kolb, 1865 and 1872 Thomsen, 1871 and 1882 Hager, 1876 Kohlrausch, 1876 and 1878 Grotrian, 1877 and 1879 Schertel, 1882 Volkmann, 1882 Lunge and Naef, 1883 Rontgen and Schneider, 1886 Cattaneo, 1889 Lunge and Isler, 1890 Le Blanc and Rohland, 1896 Barnes and Scott, 1898 Forchheimer, 1900 Bein, 1904 Cheneveau, 1904 and 1907 Zecchini, 1905 Guerdjikova, 1910 Herz, 1918 Pascal, 1919 Rabinovitch, 1921 Bingham and Stone, 1923 Manchot, Jahrstorfer and Zepter, 1924 Shiba, 1926 Hantzsch and Dürigen, 1928 0kazaki, 1935 Srinivasan and Prasad, 1939 Guillaume, 1946 Campbell, Kartzmark and al., 1953

Kremers, 1861

t			đ		
0	1.8121	1.8260	1.8282	1.8456	1,8524
19.5	.7903	. 8045	.8155	. 8249	. 8321
40	.7682	.7825	.7940	, 8037	.8114
60	.7473	.7626	.7735	,7837	.7917
80	.7268	.7415	.7534	.7639	.7724
100	.7074	.7219	.7340	.7447	.7537

	ac, 1871					II ———	ng, 1890	d		
t	đ	t	<u>d</u>	t		%		u		
0 9.67 13.47 18.01	1 . 85289 84271 83877 83413	19.13 23.00 14.41 18.64	00 % 1.83301 .82910 .83782 .83347	21 93 25 48 30 30	1 83015 82661 82182	100.0 99.5 99.0 98.5	40° 1.81217 .81393 .81541 .81644	38° 1.814049 .815902 .817371 .818350	36° 1.81603 .81787 .81933 .82028	34° 1.81801 .81984 .82131 .82222
0 9.67 13.47 18.01	1.42987 .42201 .41896 .41534	19.13 14.41 18.64	1.41446 .41822= .41485	21.93 25.48 30.30	1 41225 40943 40570	98.0 97.5 97.0 96 95	.81699 .81713 .81695 .81580 .81370 .81084	.818869 .819030 .818853 .817696 .815643 .812800	.82077 .82095 .82076 .81960 .81758 .81476	.82269 .82288 .82268 .82153 .81951 .81672
0 9.67 13.47 18.01	1.27575 .26855 .26575 .26244	19,13 14,41 18,64	1.26163 .26511 .26200	21.93 25.48 30.30	1 . 25961 . 25701 . 25354	92 90 88 86 84.5	.80299 .79245 .77937 .76393 .75083	.804960 .794457 .781439 .766004	.80693 .79646 .78352 .76810 .75485	.80891 .79847 .78562 .77018 .75692
0 8.1 10.55 15.70	1.20381 .19833 .19667 .19322	17.91 22.61 14.26 20.02	1.19172 .18859 .19425 .19035	25.55 30.62 35.37	1.18663 .18323 .18008	84 82 80 78 76 74	.74624 .72657 .70537 .68314 .66042	.748262 .728561 .707280 .685008 .662247 .639125	.75029 .73056 .70923 .68691 .66409	.75238 .73258 .71120 .68883 .66694 .64277
0 9.04 15.50	1.13370 .12892 .12539	15.82 22.02	1.12522 .12179 82 %	26.83 30.01	1.11910	72 70 68 66	.63732 .61423 .59121 .56835 .54579 .52354	.615978 .592935 .570064 .547453 .525172	.61774 .59470 .57177 .54911 .52681	.61952 .59645 .57350 .55079 .52846
0 9.04 15.50	1.07163 .06870 .06629		.06366 16 %	26 · 83 30 · 01	1.06158	64 62 60 58 56	.50159 .47998 .45876 .43804 .41776	.503184 .481526 .460298 .439565 .419267	.50478 .48307 .46186 .44110 .42079	.50638 .48465 .46343 .44264 .42233
0 9.04 15.50	1.03721 03554 03386		.03183 65 %	26 83 30.01	1 03014 02931	56 54 52 50 48 46 44	.39792 .37845 .35949 .34089	.399423 .379061 .360966 .342345 .324127	.40094 .38148 .36245 .34381 .32560	.40 245 .38 299 .36396 .34529
0 9.04 15.50	1.01919 .01825 .01700 1.00979	22.02	1.01692 .01531 34 % 1.00859	26.83 30.01 23.34	1.01385 .01278	42 40 38 36	.32267 .30482 .28732 .27011 .25321 .23655	.306263 .288737 .271522 .254628	.30770 .29019 .27296 .25604	.32708 .30916 .29165 .27440 .25746
8.61	.00932	19.07	.00750	27.21	.00534	34 32 30 28	.22017	.23 7 953 .221554 .205395	.23937 .22295 .20677	.24078 .22436 .20815
Perkin,	1886					26 24	.18816 .17252 .15716	.189488 .173844 .158430	.19085 .1 7516 .15972	.19221 .17648 .16100
%		15°	d 20°	25°		22 20 18 16 14	.14197 .12705 .11254 .09815 .08405	.143231 .128243 .11368 .09923 .08511	.14449 .12945 .11482 .09933 .08617	.14573 .13065 .11597 .10141 .08723
100 84.17 72.92 64.23	•	.83744 .77646 .64940 .54929	1.83237 .77108 .64462 .54485	1.82727 .76551 .63983 .54031	j	12 10 8 6 5	.07025 .05662 .04339 .03048 .02409	.07125 .05760 .04429 .03133 .02492 .01856	.07225 .05856 .04518 .03218 .02576	.07325 .07325 .05952 .04608 .03301 .02659
Le Blan	c, 1889					3.5 3 2.5 2.0	.01455 .01135 .00824 .00508	.01534 .01213 .00901 .00586	.01612 .01190 .00977 .00661	.01689 .01365 .01052 .00735
%		đ	- % 		<u>d</u>	1.5	.00211 0.99878	0.00283 0.99950	.00353 .000 2 4	.00422 .00095
94.11 79.68 60.98 35.77	1. 1.	83612 73521 51544 26964	0° 21.68 10.10 4.78 0	$\frac{1.0}{1.0}$	4097 6657 2989 9823	0.5 0	.99567 .99240	.99640 .993145	0.99712 .99453	0.99783 .99453

	32°	30°	28°	26°		2 4°	22°	2 0°	18°
100.0 99.5 99.5 98.5 98.0 97.0 98.5 97.0 96 95 94 92 90 88 84 82 80 78 74 72 70 68 66 64 66 62 60 58 56 56 54 52 50 48 48 40 33 43 43 43 44 40 40 40 40 40 40 40 40 40 40 40 40	1.81998 .82183 .82327 .82462 .82483 .82462 .823483 .82462 .82346 .81870 .81092 .80054 .78772 .77229 .75901 .75448 .73468 .73468 .73319 .69077 .66781 .64460 .62131 .59819 .57524 .55249 .53013 .59801 .486252 .46428 .42388 .42388 .40398 .32857 .31063 .32857 .31063 .329309 .27685 .25889 .24220 .22576 .20953 .17780 .14699 .13185 .14699 .13185 .16228 .14699 .13185 .10250 .08827 .004047 .04696 .03382 .02738 .02093 .01765 .01438 .02093 .01765 .01438 .02093 .01765	1.82195 .82384 .82525 .82680 .82657 .82680 .82658 .82546 .82345 .82070 .81298 .80265 .78983 .77442 .75658 .73668 .73567 .69273 .66971 .64645 .62312 .59995 .557698 .555422 .53181 .50966 .48789 .46665 .44584 .42544 .40553 .38603 .36700 .31821 .2091 .31214 .20165 .21091 .19489 .17912 .16356 .227716 .21091 .19489 .17912 .16356 .24362 .22716 .21091 .19489 .17912 .16356 .18380 .08930 .08930 .08930 .08930 .09921 .09528 .099911 .99579	1.823932 .825842 .8275252 .828064 .828527 .828785 .8285463 .822741 .814062 .804798 .791964 .776592 .763300 .758696 .738743 .717212 .694655 .671605 .6448312 .624962 .601742 .578730 .5555976 .533513 .511337 .489582 .468269 .447416 .427041 .407109 .387583 .368501 .343537 .313626 .228547 .212302 .12302 .149455 .13425 .11909 .106230 .04867 .09031 .06230 .04867 .09039 .001580 .01261 .00939 .001580 .01261 .00939 .00616	1.82590 .82784 .82923 .83004 .83075 .83075 .83075 .83075 .83075 .83074 .82943 .82743 .82743 .82743 .82472 .81714 .80692 .79413 .776788 .76547 .76083 .74079 .71923 .69658 .67348 .65012 .62680 .60355 .58050 .55772 .53522 .51300 .49126 .46993 .44909 .42865 .40869 .38914 .37003 .33131 .327752 .28023 .26324 .24650 .22995 .21370 .19758 .18175 .16612 .15068 .13545 .12053 .10579 .09133 .07717 .06319 .04951 .03617 .02959 .02304 .01978 .01648 .01326 .01978 .01648 .01326 .01978 .01648 .01326 .01978 .01648 .01326 .00676 .00352 .00676 .00352	100.0 99.5 99.5 98.5 97.0 98.5 97.0 96.5 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.8 97.0 98.0 98.0 98.0 98.0 98.0 98.0 98.0 98	1.82785 .82982 .83121 .83203 .83270 .83249 .83141 .82939 .82672 .81920 .80904 .79630 .76297 .74288 .72125 .698538 .65197 .62862 .608536 .58225 .55944 .51476 .49296 .47163 .45074 .43029 .41027 .370157 .35286 .33454 .31663 .29901 .28170 .26468 .24794 .23137 .21508 .19894 .18306 .12167 .10686 .09234 .07811 .06407 .05032 .03690 .03027 .02369 .02043 .01712 .01387 .01063 .00781 .00083 0.99742	1,82982 ,83181 ,83319 ,83403 ,83455 ,83448 ,83342 ,82873 ,82116 ,79844 ,74501 ,72329 ,70050 ,67730 ,65387 ,63045 ,60716 ,58400 ,56121 ,53866 ,51645 ,474531 ,45241 ,43194 ,41186 ,39229 ,37313 ,35440 ,33604 ,41186 ,39229 ,37313 ,35440 ,31812 ,30048 ,28318 ,28612 ,24938 ,23279 ,10791 ,09334 ,118314 ,13780 ,10791 ,09334 ,117279 ,10791 ,09334 ,10791 ,09334 ,01119 ,007905 ,06493 ,02104 ,01746 ,01119 ,007905 ,00493 ,02104 ,0177905 ,00493 ,02104 ,01746 ,01119 ,00797 ,00405 ,00132 ,009979	1.83180 .83381 .83518 .83618 .83664 .83660 .83543 .83347 .83077 .82330 .80062 .78537 .77199 .76732 .74715 .72535 .70250 .67924 .65579 .63230 .60897 .54040 .51819 .49636 .47500 .45407 .43357 .41346 .39386 .37469 .35593 .33756 .31964 .30197 .28467 .26760 .25082 .23422 .21784 .20170 .18570 .18570 .18570 .18570 .18570 .18570 .18570 .25082 .23422 .21784 .20170 .18570 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .25082 .23422 .21784 .20170 .18570 .20162 .20170 .18570 .20162 .20170 .20162 .20170 .20162 .20170 .20162 .20170 .20162 .20170	1.833782 .835808 .837176 .835808 .837176 .838055 .838512 .838649 .838507 .837474 .835543 .832813 .825398 .815459 .802827 .787581 .77419 .769519 .749293 .727406 .704489 .681187 .657697 .634183 .610801 .587623 .564750 .542154 .519939 .498077 .476641 .455707 .435158 .415059 .395433 .376239 .395433 .376239 .357483 .339104 .321159 .303492 .286163 .269094 .252276 .235661 .219252 .203067 .187034 .171210 .155596 .140179 .125023 .110062 .095341 .080884 .066640 .052669 .038985 .032251 .025530 .0022181 .018851 .015531 .015531 .012222 .008903 .002569 .002217 0.998695

100.0 1.83585 1.83689 1.83793 1.84003 99.5 .83784 83886 83988 84195 99.0 .83921 84022 84123 84325 98.5 .84007 84109 84211 84418 98.0 .84053 84154 84256 84467 97.5 .84068 84170 84272 84476 97.0 .84053 84154 84256 84467 97.0 .84053 84154 84256 84467 97.0 .84053 84154 84256 84467 97.0 .84053 84154 84256 84467 99.0 .83950 84052 84153 84357 95 .83760 83862 83963 84155 95 .83760 83862 83963 84156 96 .83950 84052 84153 84357 99 .81760 81867 81973 82186 88 .80505 80614 80724 80946 86 .78982 .79093 .79194 .79414 86 .78982 .79093 .79194 .79414 87.7171 .777280 .77389 .77608 88 .775143 .75250 .75357 .75573 80 .7249 .7352 .73155 .73362 78 .70645 .70744 .70844 .71044 76 .68318 .68416 .68512 .68707 74 .65962 .66058 .66154 .66348 72 .63606 .63699 .63791 .63978 66 .56654 .56744 .56833 .57011 66 .56654 .56744 .56833 .57011 66 .56654 .56744 .56833 .57011 66 .56654 .56744 .56833 .57011 66 .56654 .56744 .56833 .57011 67 .61265 .61357 .61450 .61635 68 .58947 .59038 .59128 .59309 58 .47828 .47991 .47991 .48153 66 .56654 .56744 .56833 .57011 68 .58947 .37526 .33836 .43996 69 .39798 .39856 .40012 60 .49978 .50061 .50143 .35306 60 .49978 .50061 .50143 .35306 61 .54782 .47828 .47991 .47991 .48153 62 .52167 .52252 .52337 .52507 60 .49978 .39858 .47828 .47991 .47991 .48153 64 .43676 .43756 .43836 .43996 64 .35900 .35996 .3793 .38896 .40012 64 .34062 .34138 .34214 .34366 64 .54391 .54478 .54566 .3557 .36458 .49991 .49991 .48153 64 .35000 .35996 .30597 .30652 .36206 64 .38378 .38887 .28911 .29061 .33996 65 .52466 .32342 .33418 .332569 66 .49978 .50061 .50143 .34336 .43996 67 .30499 .309778 .33856 .40012 68 .38378 .38387 .289128 .25862 .23998 88 .78387 .28913 .32866 .06094 68 .33900 .35996 .30052 .30052 .20061 60 .49978 .30062 .30062 .30062 .00065 .00053 .00053 .00062 .00062 .00062 .00062 .00062 .00062 .00062	100

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1.47837 .37293 .26419 .20515 .13365 .09689 .07612 .06213

100.0	4° 1.84849	2° 1.85066	0° 1.85284	Perkin, 1893	đ	%
99.5 99.0	.85038 .85172	. 85249 . 85382	. 85461 . 85589	 	15°	
98.5 98.0 97.5 97.0 96 95	.85249 .85300 .85310 .85301 .85195 .85016 .84034	.85460 .85508 .85516 .85509 .85406 .85230 .84968	.85671 .85714 .85722 .85719 .85618 .85444 .85188	100 99.92 99.84 96.598 93.663 84.349 72.998 64.413	1.83674 .83712 .83744 .84103 .83457 .77598	57.938 47.407 35.163 28.005 18.921 14.019 11.154 9.179
92 90 88	.83061 .81841 .80315	.84250 .83281 .82067	. 84466 . 83501 . 82294	64.413	.54939	9.179
86 84.5 84 82 80 78 76	.78960 .78510 .76437 .74198 .71858 .69485	.80542 .79180 .78737 .76657 .74410 .72062 .69677	.80769 .79402 .78864 .76877 .74622 .72266 .69871	Biron, 1899		
74 72 70	.64744 .62385	.67285 .64938	.67471 .65132	mol %	0°	d 20°
70 68 66 64 62 58 55 54 52 50 48 44 44 42 40 33 33 23 24 22 20 11 11 11 11 11 11 11 11 11 11 11 11 11	.60046 .57735 .55452 .53200 .50984 .48813 .46696 .44621 .42607 .40634 .38708 .36824 .34982 .33175 .31403 .29657 .27941 .26247 .21274 .19644 .18029 .16425 .14838 .13269 .11720 .10188 .08675 .07186 .05720 .04281	.62574 .60234 .57921 .55633 .53376 .51156 .48981 .46856 .44775 .42760 .40788 .38862 .36980 .35137 .33329 .31555 .29807 .28087 .28087 .28087 .24721 .23061 .21414 .19782 .18161 .16549 .14955 .13377 .11821 .10276 .08749 .07247 .05771 .04320 .03602	.62764 .60422 .58105 .558155 .558155 .558553 .51330 .49150 .47013 .44929 .42914 .40942 .39017 .37136 .35293 .33485 .31709 .29957 .28233 .26542 .24867 .23205 .21554 .19921 .18291 .16673 .15074 .13487 .11921 .10364 .08821 .07304 .05819 .04357	100 87. 49 77.04 67.30 60.68 51.95 50.00 46.34 39.31 33.3 25 16.6 14.5 11.1 10 8.5 7.4 7.3 6.2 5.9 5.9 5.9 6.3 4.3 12.5 11.1 10 10 10 10 10 10 10 10 10 1	1. 8528	1,8320 .8346 .8321 .8231 .8104 .7813 .7721 .7523 .7034 .6462 .5467 .4722 .4145 .3689 .3348 .3063 .2821 .2613 .2434 .2276 .2204 .2138 .2015 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905 .1905
3.5 3 2.5 2.0 1.5 1.0 0.5	.02860 .02510 .02153 .01805 .01454 .01102 .00743 .00403	.02886 .02537 .02176 .01824 .01473 .01115 .00760 .00405	.02909 .02561 .02197 .01841 .01479 .01116 .00756 .00400 0.99988	0.25 0.125 0.062	.0192 .0099 .0051 .0025	.0159 .0074 .0030 .0006

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Linebarger,	1900			Hess	, 1905				
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	0						15°		
.0	1.000	40 50	0.992 0.988	.0)	0.99913 1.13814	59	.980	1.48032 1.69550
10 20	1.000 0.998	60	0.983	39	.981 .757	1.13814	100	.096	1.84167
30	0,996	70	0,978	 					
0	2,65	30	1 015	١					
10	1.021 1.019	40	$1.015 \\ 1.013$	<u> </u>	e and Bei	n, 1905	·		
20	1.017 5.16	50 . %	1,011	%		·	<u>d</u>		
0	1 037	30	1,031		0°	5°	10°	15°	20°
10 20	1.035 1.033	40 50	1.029 1.027	0	0.99987 1.00745	$1.0000 \\ .0073$	0.999 7 3 1.00685	0.99913 1.00610	0.99823 1.00506
==	11.87		1,041	2 3 4 5 6 7 8 9	.01475 .02192	.0144 .0214	.01378	.01293	.01178 .01839
0	$\frac{1.081}{1.078}$	30	1.072	4	.02911	.0284 .0355	.02751	.01966 .02638 .03316	.02500 .03168
10 20	1.078 1.075	40 50	1.069 1.066	6	.04370 .05107	.0426 .0498	.04141	.04001	.03843
	18.33	3 %		8	.05850 .06596	.0571	.04841 $.05560$.04695 .05394	.04527 .05216
0 10	$\frac{1.138}{1.133}$	40 50	1.123 1.118	9 10	.07365	.0644	.06277 .07000	.06100 .06810	.05910 .06609
20 30	1.128 1.125	60 70	1.113 1,108	11 12	.08100 .08859	.0792	.07727	.07525 .08247	.07314 .08026
00			1, 100	12 13	.09622 .10391	.0942	.09199 .09944 .10693	.08976 .09709 .10450	.08744
0	35.1 1.275	ა გ 40	1.248	14 15 16	. 11164	. 1017 . 1093	.10693	.10450	.09468 .10199
10 20	1.268	50 60	1.248 1.242 1.235	li 17	. 11942 . 12724	.1170 .1247	.11450 .12211	. 11195 . 11947	.10936 .118 7 9
30	1.262 1.255	70	1.228	18 19	.13511 .14302	. 1325 . 1403	.12977 .13749	. 12794 . 13467	.12428 .13183
_	58.0			20 21	. 15098 . 15897	.1481 .1560	. 14525 . 15306	. 14235 . 15008	. 13943 . 14 7 09
0 10	1.494 1,486	40 50	1.462 1.454	22	. 16701	. 1640	.16092 .16884	. 15787 . 16571	.15480
20 30	1.478 1.470	60 70	1.446 1.438	24	.17508 .18320	. 1720 . 1800	. 17681	. 17361	.16257 .17041
	65.2		2,	26	. 19136 . 19956	. 1881 . 1962	.18482 .19289	. 18157 . 18956	.17830 .18624
0 10	1.575	40 50	1.543	27	.20779 .21603	. 1962 . 2044 . 2126	.20099 .20913	.19760 .20559	.19422 .20227
20	1.567 1.559 1.531	60	1.535 1.527 1.519	29 30	.22432 .23262 .24095	. 2208	.21731 .22554 .23379	.21383 .22201	.21036
30	1,531 80,4	70 = ∅	1.519	31 32	24095	. 2291 . 2374 . 2457	.23379 .24207	. 23023 . 23849	.21870 .22669 .23492
0		م د 40	1.716	22 23 24 25 26 27 28 29 30 31 32 33 34	.24928	.2541 .2625	.25041 .25880	. 24680	. 24320
10	1.752 1.743 1.734	50 60	1.707 1.698	35	.26612 .27459	. 2709	.26723 .27571	. 25516 . 26357	. 25 153 . 25 99 1
20 30	1.725	70	1.689	35 36 3 7 38	.28311 .29170 .30035	.2794 .2880	. 28425	.27202 .28052	.26836 .27685
•	83.2		7 77.2	38 39 40	. 3 0035 . 3090 7	.2966 .3053	. 29287 . 30154	.28914	. 28542 . 29406
0 10	1.783 1.774	40 50	1.746 1.737	40 41	.30907 .31785 .32672	.3141 .3229	.31029 .31911	.30656 .31533	.30278 .31156
20 30	1.764 1.755	60 70	1.728 1.718	42	. 33516	.3318 .3408	.32800 .33700	. 32421	. 32042
	95.03			44	.34469	. 3500	. 34610	.33318 .34225	.32937 .33843
0 10	1.843 1.833 1.824	40 50	1.805	45 46	.36306 .37241	. 3592 . 3685	. 355 2 8 . 36460	.35143 .36072 .37012	. 34 7 59 . 35 <i>6</i> 86
20 30	1.824	60	1.805 1.796 1.786 1.775	47 48	.38187 .39146	.3779 .3875	.37402 .38355	. 37964	.36625 .37574
อบ	1.814	70	1.775	49 50	.40116 .41096	.3875 .3972 .4070	.38355 .39319 .40296	.38926 .39899	. 385 33 . 395 05
				51 52	.42090 .43095	.4169 .4269	.41284	.40884 .41881	.40488 .41482
				53 54 55	.44114 .45143	.4370 .4473	.42284 .43295 .44317	.42890 .43909	.42487
				55 56	.46184 .47246	.4577	.45351	. 44939	.43503 .44530
				5 7	.47246 .48298	.4682 .4787	.46396 .47450	.45980 .47031	.45568 .46616

						30	.21500	.21153	.20460	.19774	.19094
58	,49369	,4894	.48514	.48092	.47674	31	. 22316	. 21964	.21265	.20571	.19884
59	.50453	.5002	.49589	.49163	.48741	32	.23136 .23960	. 22779 . 23604	.22072	. 21 370	. 20673
60	.51544	.5111	.50673	.50244	.49819	33		23604	.22891	.22185	.21483
61	.52616	.5220	.51767	.51334	.50905	34	.24792	.24431	.23714	.23001	.22293
62	.53755	.5331	.52869 .53979	.52432 .53539	.52000 .53103	35 36	.25628 .26469	.25265 .26103	.24543 .25377	.23824 .24654	.23111
63 64	.54873 .56000	.5442 .5555	.55098	.54654	,54214	37	.27317	.26950	.26218	25890	.24769
65	.57133	.5668	.56224	.55777	.55334	38	.28172	.27803	.27068	. 26537	.25611
66 67	.58276	.5782	.57359	.56908	.56461	39	.29035	. 28663	.27926 .28792	.27192	. 26464
67	.59426 .60584	.5896 .6012	.58502 .59653	.58047 .59294	.57596 .58 7 40	40 41	.29904 .30781	.29532 .30408	.28792	. 28057 . 28929	.27328 :28198
68 69 70 71 72	.61751	.6128	.60811	.60348	.59891	42	.31666	.31292	.30547	29810	. 29080
7ó	.62926	.6245	.61977	.61510	.61049	43	.32560	.32184	.31438	.30698	.29967
71	.64108	.6363	.63151	.62679	.62214	44	.33463	.33085	.32336	, 31595	.30861
72	.65 2 95 .66488	.6481 .6600	.64330 .65514	.63854 .65034	.63385 .64561	45 46	.34378 .35304	.33999 .34922	.33246 .34167	.32502 .33419	.31755 .32681
73 74	.67685	.6719	.66702	.66217	,65739	47	.36240	.35856	.325097	.34346	.33604
75 76	.68883	.6838	.67891	.67401	.66918	48	.36240 .37186	.36803	.36038	.35287	. 34541
76	.70080	.6958	.69083	.68584	.68095	49	. 38143	.37757	.36988	.36230	. 35482
77 78	.71275 .72465	,7076 ,7195	.70263 .71440	.69763	.69 269 .70433	50 51	.39113 .40093	.38724 .39701	.37953	.37190	.36437
79	.73647	.7313	.72607	.70934 .72093	.71585	52	.41085	.40691	.38926 .39911	.38159 .39141	. 3 7 404 . 38381
80	.74817	.7429	.73757	.73235	.72717	53	.42087	.41691	.40905	.40132	.39368
81	.75966	.7542	. 74885	.74352	.73827	54	.43100	.42701	.41910	.41132	.40366
82 83	.77089	.7653	.75986	.75442	.74904	55 56	.44125 .45159	.43722	.42927	.42144	.41374
83 84	.78156 .79160	.7759 .7860	.77038 .78036	.76488 .77481	.75943 .76933	57	.46204	.44754 .45795	.43953 .44989	.43165 .4419 7	.42391 .43417
85	.80093	. 7953	.78967	.78411	.77861	58	.47259	.46848	.46035	.45248	.43417
86 87	. 80950	. 8039	. 79825	. 79271	.78722	59	.48323	.47909	.47090	.46288	.45500
87 88	. 81728 . 82430	. 81 17 . 81 87	. 80609	. 80057	.79507	60 61	.49397 .50480	.48980	.48156	.47348	.46556
89	.83057	.8250	.81318 .81952	. 80768 . 81406	. 80224 . 80864	62	.51571	.50060 .51147	.49231 .50312	.48417 .49492	.47620
90	. 83611	.8306	. 8251.8	. 81976	.81449	63	.52671	.52244	.51402	.50578	.48690 .49770
91	. 84103	. 8356	.83019	. 82483 . 82929	. 81950	64	.53780	.53348	. 52500	.51669	.50857
92 93	. 84530 . 84898	. 8399 . 8437	. 83459 . 83837	.82929 .83311	.82402	65 66	.54895 .56018	.54451	.53607	.52770	.51952
94	.85202	. 8467	.84151	. 83630	. 82 7 91 . 83115	67	.57150	.55561 .56710	.54770 .55843	.53877 .54997	.53054
94 95 96	. 85437	. 8491	84394	. 83880	.83366	68	.58289	.57944	.56968	.56110	.54164 .53873
96 97	.85603	. 8508	. 84568	. 84057	. 83549	69	.59438	.58991	.58110	. 5 7247	.56405
98	. 85692 . 85674	.8517 .8515	. 84655	. 84145	.83638	70 71	.60592 .6 1 753	.60141 .61297	.59253	.58384	.56405 .5 7535
99	.85510	.8498	. 84628 . 84451	. 84115 . 83933	.83606 .83421	72	.62920	.62460	.60400 .61555	.59524	.58668
100	. 85169	. 8463	.84095	. 83569	. 83053	73	.62920 .64091	.62460 .63627	.62713	.60671 .61820	.5980 7 .6094 7
	350	300	40.0	5 00		74 75	.65264	.64795	.63872	.62969	.62086
	25°	30°	40°	50°	60°	76	.66440 .67611	.65965 .67132	.65031	.64117	.63224
P	0.99567	0.99224	0.98825	0.98809	0.98332	77	.68779	.68292	.66187 .67335	.65261 .66395	.64355
1 2	1.00378	1.00225	0.99863 1.00497	0.99435 1.00055	0.9 8 948 0.9955 7	78	.69937	. 69443	. 68469	.67512	.65473 .66572
3 4	.01688	.01518	.01128	.00673	1.00165	79 80	.71082	:70582	.69593	.68620	.67663
4	.02339	.02162	.01759	.01295	.00777	8Ĭ	.72206 .73307	.71697 .72891	. 70693	.69706	.68734
5	.02996	.02812	.02398	.01924	.01395	82	.74372	.73846	.71771 .72811	.70767 .71795	.69782
6 7 8	.03666 .04343	.03475 .04144	.03048	.02564	.02025 .02652	83	.75404	.74869	.73820	.72792	.70801 .71787
8	.05024	.04819	.04367	.03212	.03302	84 85	.76389 .77315	.75853	.74790	.73750	.72732
9	.05707	.05493	.05027	.04514	.03950	86	.78175	.76775 .77634	.75710 .76567	.74664	.73638
10 11	.06397 .07093	.06174	.05695	.05172	.04605	87	. 78967	.78428	.77364	.75521 .76319	.74490
12	.07796	.06862 .07556	.06369 .07052	05838 06511	.05265 .05935	88	.79682	.79146 .79 7 93	.78087	.77044	.75292 .76022
1.3	.08505	.08258	.07740	.07190	.06610	89 90	. 80 32 7 . 80905	.79793	.78739	.77701	.76680
14	.09221	.08966	.08435	.07877 .08571	.07291	91 92	.81422	. 80375 . 80896	.79326 .79856	.78292	.77274
15 16	.09943 .10671	.09680 .10402	.09138	.08571	.07981	92	. 81878	. 81358	. 80330	.78829 .79315	.77817
17		.11151	.10564	.09273	.086 77 .09381	93 94	.82273	.81760	80744	.79743	.78314 .78758
18	.11408	.11865	.11288	.10695	10090	95	. 82604 . 82863	.82096 .82361 .82549 .82641	.81095	. 80109	.79140
19 20	.12896 .13649	.12606 $.13352$.12017 .12752 .13495	.11417	.10805	96	. 82863 . 83047	.82549	.81370 .81566	. 80396 80600	.79438 .79652
21	.13049	.14105	13405	.12144 .12878	.11528	97	.83137	. 82641	81664	. 80600 . 80 7 05	.79652 .79667
22	.15172	.14105 .14864	14243	13610	.10805 .11528 .12255 .12990	98 99	.83137 .83104 .82917	. 82608 . 82419	. 81634	. 80682	.79652
23	.15944	.15630	.15000	.13619 .14367	.13733	100	.82546	. 82419 . 82046	.81446	. 80500	.79652 .79584
25	.15944 .16721 .17504	.16401 .17180	.15761 .16529	.15120 .15881	.13733	1		.02070	.81073	. 80131	.79225
20 21 22 23 24 25 26 27	.18292	.17963	.16529	.15881	.15234 .15914	The v	alues for	5° are c	opied in I	Landolt t	ables.
27	.19086 .19885	.18750	.18083	.17419	.16760	volum	e I, 5 th	edition	nage 307		
28	.19885	.19545	.18869	.18198	.17532	.01.001	, 0		page J77	•	
29	. 20690	.20346	.19662	.18983	.18310	===					
l						i -					

Jones, 190	04 and Jones at	nd Basset, 1	.905	Jones and Pe	earce, 1907		<u>-</u>
M	đ	M	đ	M	đ	М	<u>d</u>
0.1 0.2 0.3 0.4 0.6 0.8 1.0	0 1.005208 1.009420 1.016820 1.023044 1.034288 1.044748 1.060112 1.091012	2.0 2.5 2.73 3.28 3.825 4.37 4.5 5.0	1.119872 1.148408 1.159108 1.192108 1.219264 1.246560 1.260248 1.277340	0.010 0.025 0.050 0.075 0.10 0.25	1.000719 .001907 .003551 .005152 .00677 .01618	0.50 0.75 1.00 1.50 2.00	1.03218 .04760 .06307 .09345 .12316
					iressman, 1927 her and Geffcke		
Ferguson,	1905			*	mol 5	å d	
8	đ	%	d	10.0	25°	1 00	2242
0 0.701 0.713 5.143 9.471 14.219 19.041 23.932 28.546	0.99904 1.00372 .00392 .03371 .06378 .09810 .13423 .17240	56° 58, 135 62, 338 63, 784 66, 516 70, 995 74, 459 77, 550 79, 387 81, 323	1.48080 .52662 .54253 .57330 .62566 .66630 .70280	12.8 29.0 41.8 48.8 70.3 75.6 84.3 89.6 95.2	105 11.65 94 15.24 92 30.40 25 37.59 82 49.75 66 61.35	.31 .37 .60 .67 .76	6662 416 916 9861 701 554
33,486 38,641 44,144 49,520 53,184 56,674	. 209 32 . 25010 . 29 386 . 34 280 . 39 330 . 42 941 . 465 34	83,474 86,363 88,530 89,742 91,322 93,222	.74556 .76824 .79424 .81000 .81759 .82578 .83380	Herz, 1930	đ	Я	đ
Dunstan an	d Wilson, 1907			19.481 39.757	1.13814 1.29359	59.980 80.096	1.48032 1.69550
%	d	%	d				
	2	5°		Tollert, 19	39		
99.924 97.513	1.82714 .83171	$81.086 \\ 80.243$	1.73197 .72287	N	d	N	đ
95.723 93.410 92.300 91.363 90.437 89.575	. 82986 . 82348 . 81930 . 81476 . 80982 . 80525	79, 838 79, 528 78, 242 76, 271 74, 746 70, 519	.71844 .70030 .70030 .67756 .65976	1.962 1.000 0.100	1.05960 1.03012 1.00147	0.0100 0.0050	0.99867 0.99845
88.733 88.001 86.865 86.979 85.070	.79985 .79522 .78650 .78737 .77160	70.519 69.205 67.209 64.643 58.356 51.640	.59488 .57236 .54331 .47457 .40596	Klotz and E			
84.970 84.280	. 77074 . 76447	49.858 43.234	.38 8 57 .32691	M	d	M	d
83.980 83.401 82.580 82.210 81.544	.76069 .75588 .74750 .74384 .73719	36.427 26.492 15.699 0	.26759 .18630 .10413 0.99717	0 1.275	0.997074 1.075087	5° 2.030 3.194	1.119288 1. 18 5392

Kremann a	nd Ehrlic	ch, 1907		Shiba, 1926			
%	mol %		00 cc	%	t	π	
	. <u></u>	0-16.40°	15.50-32.50°	96.20	19.3 24.4 19.7	35.20 34.39	
96.3 92.9 91.6 89.3 86.5 83.7 81.4 78.1 74.1 67.2	82.5 70.5 65.5 60.5 54.0 48.5 44.5 39.5 34.5 27.5	0.916 0.884 0.902 0.925 0.968 0.996 0.974 0.978 0.926 0.895	0.887 0.901 0.914 0.940 0.983 1.011 0.985 0.959 0.936	90.31 81.53 60.04 30.19	19.7 24.4 20.0 24.0 21.2 20.0 24.3 20.0 25.0	29.80 30.38 28.00 27.66 30.01 31.15 36.60 36.36 45.91 45.43	
21.2			° 40.68-50.60°				
96.3 92.9 91.6 89.3 86.5 83.7 81.4 78.1	82.5 70.5 65.5 60.5 54.0 48.5 44.5 39.5 34.5	0.436 0.441 0.454 0.475 0.482 0.487 0.475 0.460	0.510 0.522 0.545 0.550 0.566 0.569 0.559 0.544 0.535	Gibson, 1934 wt #	π 25°	wt %	π
67.2	27.5	0.440 50.60-62.22	0.527 ° 62.22-75.70°	5.36 12.66 26.67 33.01	39.35 38.78 37.04 33.17 31.51	77.67 78.48- 86.35 92.77	24.55 24.61 24.0 26.7
96.3 92.9 91.6 89.3 86.5 83.7 81.4 78.1 74.1	82.5 70.5 65.5 60.5 54.0 48.5 34.5 34.5 27.5	0.611 0.619 0.630 0.640 0.665 0.671 0.672 0.644 0.630	0.709 0.711 0.720 0.745 0.756 0.761 0.752 0.728 0.714	Mikhailov and		6 (fig.) π 0° 60°	80°
		0-33.4° 33.35-56.5		0			
96.3 93.5 90.0 87.7 84.1 81.1 76.8 66.6	82.5 72.5 62.0 54.6 49.0 44.0 38.0 27.0	1.761 1.188 1.779 1.225 1.862 1.291 1.970 1.330 2.000 1.336 1.948 1.320 1.901 1.281 1.810 1.220	1.270 1.303 1.360 1.392 1.400 1.410 1.351 1.279	4.2 10 15 20 25 35 50 70 91.3	44.5 4 43.5 4 41.5 3 7.5 3 35.8 3 32 3 28.5 2 25.5 2	3 42.5 2.2 41.8 1 40.5 9.8 39.7 7 37 5.8 35.8 2.5 33 9.5 30.5 6.5 28 9.8 31.5	42.2 41.5 40.4 39.6 37 36.2 34 31.5 29
Schmidt,							
	*	t	π				
	91.7 72.0 63.0 50.6 44.7 31.1 28.6 21 20 16.4	20.6 19.6 19.6 18.2 18.4 19.7 18.5 18.7 22 18.3 18.5	25.0 22.8 24.2 26.1 27.6 31.4 32.3 35.8 36.5 37.9 43.1				

				Ĭ		50.70.4	
Vicesita	and surface to	ension		15.85	6594	59.72 % 28.1 <u>8</u>	4903
Viscosity	and Surface to			16.37 27.55	6505 4970	38.25 38.50	3962 3944
Windomana	100/			16.02		70.25 %	8721
Wiedemann, c	minutes	c	minutes	16.03 16.60 27.77	12303 12085 8866	28.44 37.26 37.43	7025 7005
	of flow		of flow	27.77		81.92 %	7005
0	20 1		2 214	16.22 27.37	28700 1 877 0	37.40 38.08	13510 13 2 60
3.37 5.90	1.060	45.84 74.83 92.26	2.314 3.975 6.064	28.31	18160	84.77 %	
11.42 22.83	1.097 1.207 1.500	124.04 183.96	14.140 21.640	15.47	32650	29.56 37.54	18980
				16.82 29.20	30 7 50 19140	37.78	14550 14430
				15.22	32940	87.57 % 28.69	19770
Grotrian,	1877			15.29 28.55	32790 19860	35.60 39.80	15830 13 8 50
%		η					
	10°	20°	30°	l l			
0 10.00	1305 1 721	1005 1233	802 971	Wagner, 1	883		
20.57 30.70	2070 2528 3527	146 7 1950	1205 1619	t	23	η (water ^c 15,503 %	
40.07 66.30	35 27 10040	2673 6062	2121 3993				
				15 25 35	n	.2271 0.9507 .9550 0.7499 .7747 0.6053	0.6090
Constant	1.000			45	ő.	6427 0.4977	
Grotrian,							
t	η 0 9	t	m	D'Arcy, 1	889		
14.43	1205.1	27.22	890.3	t	η (water20	0=1) t	η (water20=1)
14.47 27.00	$1211.3 \\ 895.0$	36.52 37.75	738.6 715.0	14.4	2 5.1	98 % 55	7.51
	10	•		22.1 27.5	18.8 15.7	72 85	5.24 4.08
18.07 19.33	1319.4 1279.7	$\frac{31.42}{40.13}$	980.1 827.8	37.5 45.5	17.2 9.48 ₈	100.5	3.24
29.29	1024.0	40.67	820.2	14.4	28.97	55	7.61 5.37
17.29	19,48 1683	29.14	1306	20.7 28.2	22.3 17.1	70 85 100	5.37 3.97 3.11
18.32 28.75	1651 1292	37.58 37.07	10 77 1069	36.5 45.5	12.9 9.91		3.11
	29.8	8 %		12	29.16	33.3 % 47.2	8.64
16.55 17.29	2263 2232	28.27 36.65	1720 1440	25 35.3	17.6 12.3	56.5 66.3	6.89 5.48
27.81	1730	36.90	1432		8	30.3 %	
15.48	39.89 3093	9 % 28.30	2301 1894	14 27.5	22.4 13.8	69.9 80.2	4.54 3.75 3.13
16.55 27.94	3020 2321	38.06 38.25	1894 1885	41.3 50.5	8.88 7.05	90 100	2.70
	50.2	1 %		11.4	7 14.36	3.4 % 59.8	4.16
17.75 17.92	4156 4131	29.25 29.48	3227 3182	23.4 36.4	9.77 6.92	72.8 88.5	3.27 2.54
17.92 18.15 18.58	4131 4113 4064	36.14 37.69	2791 2710	50.3	5.02	100.5	2.15
			· · · · · · · · · · · · · · · · · · ·				

Kremann and Ehrlich, 1907	Bingham and Stone, 1923
wt %mol % η (water°=1)	% п 10° 20° 40°
0° 33° 13.7 3.0 1.247 0.820 36.1 9.5 2.134 1.266 54.6 20.0 4.449 2.073 66.7 27.0 8.640 3.486 71.9 31.0 13.167 4.748 76.8 38.0 19.290 6.379 81.1 44.0 28.374 8.370 84.1 49.0 36.412 9.050 87.7 54.0 34.860 9.101 89.9 62.0 30.560 8.823 93.5 72.5 25.330 8.444 96.3 82.5 29.340 8.932 63.5° 98.5° 128.0° 13.7 3.0 0.647 0.516 - 36.1 9.5 0.920 0.737 - 54.6 20.0 1.415 1.064 - 66.7 27.0 2.024 1.437 1.232 71.9 31.0	97.70 35000 24220 13070 97.77 35120 24260 13070 87.62 39140 25880 13220 87.69 39170 25890 13220 75.23 20880 14830 8424 74.83 20880 14830 8416 62.67 8679 6604 4230 62.85 8700 6627 4223 - 6620 4223 - 6620 4223 - 8692 6611 4230 50.03 4895 3779 2496 50.07 4893 3800 2495 37.86 3180 2524 1650 37.80 3183 2525 1649 25.10 2276 1749 1139 11.76 1804 1418 968 11.75 1805 1417 967
76.8 38.0 3.087 1.875 1.405 81.1 44.0 3.648 2.072 - 84.1 49.0 3.945 2.187 1.525 87.7 54.0 4.033 2.254 1.598 89.9 62.0 4.076 2.261 1.653 93.5 72.5 4.023 2.230 1.722 96.3 82.5 4.132 2.231 1.794	Rhodes and Barbour, 1923
	0° 25° 50° 75°
Dunstan and Wilson, 1907 and 1914 25° 99.924 24682 81.086 19403 97.513 19939 80.243 18158 95.723 19357 79.838 14013 93.410 19579 79.528 17235 92.300 19783 78.242 15630 91.363 20264 76.271 13345 90.437 20578 74.746 12463 89.575 22118 70.519 9322 88.733 21294 69.205 8475 88.001 21522 67.209 7515 86.865 21708 64.643 6520 86.979 21745 58.356 4782 85.070 22040 51.640 3574 84.970 21615 49.858 3419 84.280 21513 43.234 2626 83.980 21160 36.427 2148 83.401 21126 26.492 1655 </td <td>0.00 1800 940 556 390 5.00 1970 1010 620 440 9.39 2100 1110 680 480 13.42 2260 1220 720 510 17.42 2420 1340 760 560 20.34 2620 1410 850 600 24.10 2960 1580 960 660 29.80 3390 1880 1120 770 39.70 4470 2460 1600 1070 51.20 6850 3730 2420 1720 62.50 11560 5930 3530 2520 70,90 21600 9450 5260 3420 78.20 43200 15500 7550 4460 81.40 - 19000 8570 4900 83.50 - 19700 9080 5170 87.50 54600 19000 9180 5</td>	0.00 1800 940 556 390 5.00 1970 1010 620 440 9.39 2100 1110 680 480 13.42 2260 1220 720 510 17.42 2420 1340 760 560 20.34 2620 1410 850 600 24.10 2960 1580 960 660 29.80 3390 1880 1120 770 39.70 4470 2460 1600 1070 51.20 6850 3730 2420 1720 62.50 11560 5930 3530 2520 70,90 21600 9450 5260 3420 78.20 43200 15500 7550 4460 81.40 - 19000 8570 4900 83.50 - 19700 9080 5170 87.50 54600 19000 9180 5
82.580 20888 15.699 1360 82.210 20128 0 891 81.544 19327	Grunert, 1925 (fig.)
	t n 3.475 N 1.7375 N 0.8688 N 0.43 44 N
	20 1909 1382 1169 1088 40 1233 905 766 713 60 886 645 551 512 80 676 495 424 395

Rhodes and Hodge, 1929 (fig.)							
%		0°	η 25°	50°	7 5°		
0 10 20 30 40 50 60 70 80 85 90 95	10 18 46 65 60	2500 1 3000 2 4000 3 5000 3 5500 5 8000 1 5000 2 5000 2 5000 2	1000 1500 2000 2500 3500 4000 5500 8000 7000 2000 1000	600 700 800 1050 1400 1900 2900 4650 7900 9300 9350 9350	400 500 600 700 950 1400 1950 3000 4500 5200 5350 5350 5750		
Vinal and	Craig	, 1933					
%	30°	25°	η 20 °	10°	0°		
10 15 20 25 30 35 40 45	976 1088 1225 1392 1596 1850 2163 2561 3074	1091 1218 1371 1559 1784 2067 2409 2850 3400	1228 1372 1545 1755 2006 2319 2700 3190 3790	1595 1784 2010 2274 2600 2990 3480 4090 4860	2160 2410 2710 3080 3520 4040 4700 5490 6520		
*	-10°	-20°	η -30°	-40°	-50°		
20 25 30 35 40 45 50	3820 4330 4950 5700 6600 7720 9150	6630 7490 8560 9890 11500 13600	12200 13900 16000 18600 21700	25300 28800 33000	52600 59500 -		
Tollert,	1939						
N		ŋ		N	<u> </u>		
1.962 1.000 0.100		1199.5 1101.8 1016.1		0100 0050	1006.6 1005.8		

Srinivasan and Prasad, 1939									
%	η	%	η						
2.7573 3.3437 3.7594 4.1671 5.1652 11.323 16.132 17.368 23.881 27.100 31.211 35.879 38.957 41.854 46.782 50.363 52.395 55.423	765.45 774.04 781.05 786.37 797.15 915.71 1019.2 1113.1 1233.8 1346.3 1512.5 1766.4 1912.6 2116.1 2350.0 2501.7 2873.3 3056.2 3419.2	62.069 63.579 65.207 70.888 72.052 75.241 77.838 80.906 83.289 86.161 89.418 89.885 91.875 93.412 95.469 99.20 99.91	4599.3 5366.2 5610.0 7703.8 8063.1 9561.2 11448 12225 13414 14890 15570 15245 15169 14631 14429 14401 15226 17398 17684						
2.71 $\eta = (3$ between 86 $\%$ 3.63 $\eta = (3$	Roberts, 1944 2.71 $\eta = (304/(t+1.7 c-47))^{a}$ between 86 % and 98 %: 3.63 $\eta = (374/(t+1.7 c-47))^{a}$ where $c = \%$ acid and $a = constant$								
(fig.) %	a	×	a						
50 60 70 80	1.3 1.8 2.6 3.75	86 86 90 100	4.3 4.0 4.1 4.7						
Campbell, Ka	artzmark and a	n1., 1953	n						
	50								
8.95 17.11 24.15 30.85 43.45 53.12 55.74	580.2 782.8 935.5 1123.0 1671.2 2349.8 2642	60.45 67.65 72.62 75.41 82.95 92.8 96.2	3076 4467 5891 6868 9543 9696						
8.95 17.11 24.15 30.85 37.53 43.45 53.12 55.74	389.3 457.5 552.7 552.9 779.9 951.5 1147.1 1794 (sic)	60.45 67.65 72.62 75.41 82.95 92.80 96.20	1791 2074 2975 3713 4148 5341 5666						

%			η			
	20°	30°	50°	80°	110°	132°
80	20730	14690	8240	4280	3062	2001
84	24840	17180	9320	4720	3331	2149
85	25200	17450	9460	478 0	3372	2176
86	25280	17550	9550	4840	3415	2205
87	25140	17520	9580	4880	3447	2222
88	24630	17280	9540	4890	3464	2237
90	23610	16815	9470	4920	3506	2275
92	22550	16270	9330	4930	3528	2298
93	22120	16030	9250	4920	3529	2302
94	21860	15900	9230	4924	3534	2308
95	21930	15980	9300	4960	3559	2320
96	22200	16165	9380	4995	3574	2328
98	24080	17320	9830	5110	3615	2326
99	26650	18820	10370	5230	3652	2316
.00	28210	19690	10690	5310	3691	2317

Volkmann, 18	382		
đ	or or	d	σ
	1	5°	
1.8278 1.6657 1.4453	60.7 69.0 76.6	$\frac{1.2636}{0.9991}$	76.6 73.3

Linebarger, 1900 0° 10° 20° 30° 0 2.65 5.16 11.87 18.33 35.13 58.05 65.27 80.45 83.23 95.63 75.49 73.60 74.02 74.75 75.30 77.19 77.60 77.41 66.60 64.18 58.26 74.01 72.69 73.14 74.10 74.44 76.68 77.44 77.34 66.40 64.09 57.97 72.53 72.02 72.31 73.48 73.59 76.34 77.25 77.29 66.32 63.89 57.76 71.03 71.13 71.29 72.58 72.75 75.45 77.08 77.13 66.00 63.70 57.53 95.02 40° 50° 60° 70° 0 2.65 5.16 11.87 69.54 70.07 70.43 71.52 71.92 74.68 76.76 76.99 65.92 63.54 57.43 67.8 66.0 64.2 69.01 69.33 70.45 70.90 74.05 76.49 76.89 18.33 35.13 58.05 65.27 69.95 73.15 76.03 76.74 65.67 63.37 57.28 68.89 72.25 75.55 76.31 65.50 63.19 56.89 80.45 83.23 95.02 63.48 57.36

Whatmough,	1902		
%	σ	K	σ
	18	3°	
_ 0	74.16	49	78.87
10 20	74.72 75.81	50 52	78.94 78.70
30	77.17	54	78.63
40 41	78.40 78.49	56 58	78.51 78.37
42	78.65	60	78.38
43 44	78.76 78.88	70 80	77.00 74.11
45	79.15	90	67.30
46 47	79.14 79.01	92.5 95	64.74 61.44
48	79.04	98.4	56.15

t	σ	
19.1 19.0 21.8 21.9 19.4 20.7	75.26 75.67 76.84 77.62 78.80 82.13	
	19.0 21.8 21.9 19.4	19.0 75.67 21.8 76.84 21.9 77.62 19.4 78.80

Sabinina	and Terpug	ov, 1935			
%			σ		
	10°	20°	30°	40°	50°
0.00 5.43 10.13 11.19 13.22 17.12 21.50 26.49 33.30 41.50 52.85 67.12 88.50	74.01 75.57 77.10 77.25 77.40 77.18 76.40 75.50 73.98 71.80 68.00 62.26 55.22 52.92	72.53 74.43 76.19 76.41 76.57 76.45 76.06 75.15 73.73 71.52 67.71 61.98 54.86 52.55	71.03 73.48 75.35 75.56 75.78 76.03 75.93 75.72 74.87 73.46 71.24 67.43 64.70 54.56 52.23	69.54 72.62 74.54 74.90 75.22 75.59 75.39 74.57 70.98 67.17 61.43 54.27 51.95	67.80 71.55 73.55 73.55 74.99 75.11 74.94 74.20 72.95 70.73 66.92 61.15 54.00 51.70

%	0°	30°	50°	van der W	illigen, 186	(8		
0 4.67 8.93 16.40 22.73 28.18 32.90 37.05 40.71 42.38 43.97 45.56 46.88 48.06 48.23 49.51 57.86 61.08 66.23 70.18 72.95 75.84 79.69 83.66 86.26 87.29 91.82 92.62 93.63 94.49 95.15 95.15 95.16 96.12 97.32 99.26 99.80 100.00 100.00 101.60 102.40 103.05 103.10 103.45	75.75 75.35 75.37 75.66 76.07 76.56 76.91 77.05 77.11 77.05 76.80 76.57 76.41 75.82 75.17 74.45 73.39 70.63 69.06 67.22 64.12 62.06 56.18 54.98 54.44	71.03 71.15 71.187 72.60 73.60 73.97 74.34 74.39 74.46 74.37 74.34 74.30 73.29 72.16 73.80 73.29 72.47 71.63 71.00 70.03 68.66 64.12 63.29 61.24 57.53 55.54 54.68 54.29 65.27 69.29 61.24 69.72 64.12 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.24 63.29 61.20 61.29	67.59 67.59 67.59 67.68.26 68.95 69.80 70.52 71.24 71.70 72.12 72.35 72.38 72.44 72.51 72.50 72.49 72.41 72.24 72.01 71.34 70.41 69.85 68.87 67.24 65.47 62.20 60.10 56.70 56.70 56.70 56.70 56.70 57.70 58.85	0.00 0.10 0.15 4.46 15.82 19.00 23.29 30.10 38.78 47.22 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 0.00 0.15 4.46 15.82 19.00 23.29 30.10 38.78 4.72 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 0.00 0.15 4.46 15.82 19.00 23.29 30.10 38.78 47.22 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 0.00 0.15 4.46 15.82 19.00 23.29 30.10 38.78 47.22 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72 56.25 63.25 93.29 30.10 38.78 47.22 56.25 63.29 94.72 0.00 0.10 0.15 4.47 85.93 88.97 91.43 94.72 56.25 63.29 91.43 94.72 56.25 63.29 91.43 94.72 0.00 0.15 4.46	A 1.32925 .32942 .32933 .33442 .34786 .35187 .35746 .36541 .37603 .39797 .40819 .41930 .43049 .43279 .43151 .42918 .42684 .8 D 1.33327 .33332 .33335 .33862 .35219 .35630 .36199 .37009 .38084 .39131 .40308 .41342 .42466 .43596 .4369 .43669 .43426 .43163 .6 1.33930 .33940 .33939 .34483	n a 18.3° 1.33006 .33011 .33009 .33521 .34874 .35836 .36630 .37699 .38731 .39898 .40923 .42042 .43168 .43335 .42700 .43035 .42781 E 1.33548 .33553 .33553 .33558 .34089 .35447 .358340 .39393 .40574 .41618 .42740 .43877 .44081 .43944 .43701 .43431 .6 1.34087 .34093 .34099 .34437	B 1.33070 .33076 .33076 .33076 .33079 .33588 .34946 .35349 .35913 .36708 .37783 .38823 .39995 .41016 .42133 .43463 .434367 .43114 .42868 β 1.335597 .33600 .34133 .35504 .35916 .36486 .37308 .38388 .39444 .40627 .41669 .42793 .43996 .43749 .43484 .H' 1.34259 .34257 .34265	C 1.33142 .33141 .33148 .33663 .35021 .35426 .35995 .36708 .37867 .38910 .40082 .41112 .42227 .43360 .43579 .43444 .43198 .42944 F 1.33739 .33749 .33749 .34285 .36071 .36644 .38552 .39612 .40793 .41838 .42967 .44103 .44163 .443922 .43649 H 1.34377 .34385 .344387
Suggit, Azi	z and Wetmore	e, 1949 %	a	15.82 19.00 23.29 30.10 38.78 47.22	.35868 .36277 .36842 .37679 .38756 .39824	.36022 .36437 .27010 .37846 .38930 .39998	.36199 .36610 .37192 .38022 .39115 .40184	.34938 .36329 .36736 .37321 .38158 .39243 .40316
4.11 8.26 12.18 17.66		21.88 29.07 33.63	73.91 74.80 75.29	56.25 63.69 71.97 81.41 85.93 88.97 91.43 94.72	.41013 .42058 .43186 .44327 .44534 .44392 .44144 .43869	.41184 .42233 .43364 .44507 .44706 .44569 .44316 .44037	.41370 .42421 .43561 .44703 .44901 .44759 .44512 .44229	.41514 .42567 .43696 .44841 .45040 .44883 .44640 .44347

Le Blanc, 1	889				Cheneveau,	1904 and 19	907		
	n _D %	n _D	%	n _D	×	n _D	9	6	\mathbf{q}^n
		20°	···				15°		
	2879 35.7 3459 21.6 9998 10.1	7 1.37731 8 .35756 0 .34527	4.78	1 33890 33325	95.38 89.87 83.88 77.33 70.15 61.69	1.4317 .4379 .4377 .4312 .4216 .4104	21 19 16	.60 .92 .15 .26 .18 .26 .15 .93	1.3636 .3602 .3568 .3531 .3532 .3494 .3456
Le Blanc a	nd Rohland, 1	896			52.36 41.99 30.14	.3853 .3706 .3698 .3667	6 3 0	.41	.3418 .3375 .3334
%	n _D	%	1	n _D	29.68 27.20	.3667			
79.68 60.98 35.77	1.4343 .4097 .3770	0° 10.10 4.78 0		3450 3386 3333	Veley and	Mauley, 190	5 n		
						H _{,cc}	D "	H_{β}	н _у
Wagner, 19	0.3				0.04	1 222505	15°	1 220007	1 242020
c c	n _D	c		n _D	0.84 1.76 3.88	1.332805 .333944 .336416	1.334664 .335794 .338313	1.338807 .339984 .342490	1.342029 .343181 .345704
	<u> </u>	7.5°			11 5.1	.337896 .343485	.339855	.343964 .349633	.347326 .352955
0 0.290 0.590 0.897 1.209 1.526 1.848 2.174 2.503 3.169 3.506 3.844 4.182 4.521 4.860 5.200 5.541 5.882 6.256 6.568 6.911 7.254 7.598 7.942 8.632 8.978 9.671 10.018 10.366 10.714 11.063 11.413	1.33320 .33358 .33397 .33435 .33474 .33513 .33551 .33590 .33628 .33667 .33705 .33743 .33828 .33888 .33896 .33934 .33972 .34010 .34048 .34124 .34162 .34199 .34237 .34313 .34350 .34388 .34426 .34426 .34426 .34450 .34537 .34575 .34577 .34577	14.566 14.917 15.268 15.620 15.972 16.325 16.678 17.032 17.387 17.742 18.098 18.455 18.812 19.170 19.529 19.889 20.249 20.610 20.971 21.333 21.695 22.787 23.153 23.520 23.887 24.256 24.625 24.995 25.738 26.110 26.483		4947 4984 5095 5095 5095 51392 55139 55242 55242 55352 55352 55352 55352 55352 55352 55352 55352 55425 55425 55425 55425 55425 55425 55533 55642 55750 55750 55750 55750 65758 66002 66002 66003 66002 66003 66109 66109 66131	9.58 14.0 18.31 22.16 25.9 29.24 30.86 34.35 38.48 42.45 46.46 52.24 59.65 62.88 66.44 69.6 72.28 74.86 76.59 78.09 80.05 80.43 81.77 83.2 84.56 85.92 86.37 87.40 90.53 97.3 99.3	.343485 .349001 .354322 .359194 .364051 .370161 .379184 .384119 .3884199 .388365 .401655 .406267 .410536 .415487 .419838 .423549 .426858 .428767 .429030 .430841 .432946 .433230 .434442 .435459 .436267 .4362	.345361 .350953 .350953 .361248 .3661248 .360196 .3772280 .376132 .381388 .386350 .391184 .398589 .403907 .408582 .412850 .417822 .412850 .425950 .429185 .431388 .433239 .435628 .436618 .436618 .436618 .436632 .438632	349633 355233 360653 365598 370506 374726 376830 380948 386002 390990 395934 408767 413445 417767 422782 427177 430943 434234 436494 438242 440335 440658 441871 443617 443617 443611 44361 44361 443611 4436	.352955 .358576 .363939 .368854 .373882 .378211 .380248 .384426 .389530 .394507 .399508 .406851
11.763 12.113	.34650 34687	26.857 27.231 27.606	.3	6217 6252 6287	*	τ.106		×	τ.106
12.463 12.813 13.163 13.513 13.864 14.215	.34724 .34761 .34798 .34836 .34873 .34910	27.982 28.359 28.737 29.116 29.496	.3 .3 .3	6287 6323 6359 6359 6429	0.84 1.76 3.83 5.1	86 101 101 130	18	.58 .0 .31 .16	150 170 213 256

t 17.2 4 16 7 16.6 3 18.6 3 18.3 6 16.0 2 17.1 1 17.2 7 16.2 7 16.2 7 16.3 18.3 19.2 8 18.2 8 19.2 8 19.3 8 19.2 8 19.3 9 16.1 1 20.1 1 20.8 3 19.2 8 18.6 20	n _D 1.4256 .4347 .4362 .4183 .3846 .3718 .3640 .3523 .3452 .3413 .3413 .3413 .3413 .3413 .3413 .3413 .3416 .3329	1 2 6 6 4 1 7 8 7 2 9 0 3 5 0 4 4 5 7	100 84.3 73.1 60.5 35.2 17.8	3	20° 7 7 8 8 8 8 7 8 8 7 8 8 8 8 8 8 8 8 8	% 6.7669 5.1678 4.710 4.5146 4.0018 3.017 1928 % 75.625 84.382 89.666 95.259	n _D 1.34111 .33921 .33872 .33847 .33792 .33668 1.42754 .43559 .43484 .42831
0 17.2 4 16 7 16.6 3 18.6 3 18.6 3 15.9 6 16.0 2 17.1 1 17.2 7 16.2 7 16.2 9 16.1 1 20.8 3 19.2 8 18.6 20 D 15° 4 1.333(4 .35782 9 .381(9)	1.4256 .4347 .4362 .4183 .3846 .3718 .3640 .3523 .3452 .3412 .3413 .3411 .3369 .3355 .3348 .3347 .3346 .3329	1 2 6 6 4 1 7 8 8 7 2 9 9 0 3 5 5 0 4 5 7 8 7 8 7 8 7 7 8 7 8 7 8 7 8 7 8 7 8	100 84.3 73.1 60.5 35.2 17.8 Fajans 12.8 29.0 41.8 43.8 70.3	1.4182; 8 .4372; 3 .4258; 7 .4087; 39 .3762; 90 .3546; , Kohner and (7) 94 11 55 Geffcken, 870 25° 60 107 76	6.7669 5.1678 4.710 4.5146 4.0018 3.017 1928 \$ 75.625 84.382 89.666 95.259	1.34111 .33921 .33872 .33847 .33792 .33668
4 16 7 16.6 3 18.6 3 18.3 6 16.0 1 15.2 7 17.2 7 16.2 9 16.1 1 20.1 2 3 20.8 3 19.2 8 18.6 20 15.2 1 1.3334 4 1.333782 9 .38169	. 4347 . 4362 .4183 .3846 .3718 .3640 .3523 .3452 .3413 .3413 .3411 .3369 .3355 .3348 .3347 .3346 .3329	1 2 6 6 4 1 7 8 8 7 2 9 9 0 3 5 5 0 4 5 7 8 7 8 7 8 7 7 8 7 8 7 8 7 8 7 8 7 8	Fajans 12.8 29.0 41.8 43.8 70.3	8 .4372(3 3 .4258) 7 .4087- 39 .3762 90 .3546) , Kohner and (7) 94 11 55 Geffcken, 870 25° 60 107 76	5.1678 4.710 4.710 4.5146 4.0018 3.017 1928 \$ 75.625 84.382 89.666 95.259	.33921 .33872 .33847 .33792 .33668 .33668 .33668
1 15.2 7 17.2 7 16.2 6 16.9 9 16.1 1 20.1 2 16.6 3 20.8 8 18.6 20 D 15° 4 1.333(4 8 .35782 9 .381(9)	. 3452 . 3412 . 3413 . 3413 . 3411 . 3369 . 3355 . 3348 . 3347 . 3346 . 3329	7 2 9 0 3 5 0 4 4 5 7 8 6,	12.8 29.0 41.8 48.8 70.3	802 1.3473 394 .3674 106 .3825 94 .3917 92 .4207	25° 50 40 76 775	75.625 84.382 89.666 95.259	1.42754 .43559 .43484
1 20.1 2 16.6 3 20.8 3 19.2 8 18.6 20 15° 4 1.333(4 3.35782 9 .381(9	n F	5 0 4 5 7 8 8 6' 1.34100 .36563	12.8 29.0 41.8 43.8 70.3	802 1.347: 394 .367- 106 .382: 94 .391: 92 .420:	25° 50 40 27 76 75	75.625 84.382 89.666 95.259	1.42754 .43559 .43484
D 15° 4 1.333(4 8 .35782 9 .381(9	.3346 .3329 n F	G' 1.34100 .36563	29.0. 41.8 48.8 70.3	394 .367- 106 .382: 94 .391: 92 .420:	10 76 75 	84.382 89.666 95.259	.43559 .43484
15° 4 1.33364 8 .35782 9 .38169	1.33775 .3(223	1.34100 .36563	Herz,		15°	n _D	
15° 4 1.33364 8 .35782 9 .38169	1.33775 .3(223	1.34100 .36563	Herz,		15°	n _D	
4 1.33364 8 .35782 9 .38169	.3(223	.36563			15°	'D	
8 .35782 9 .381 <i>(</i> 9	.3(223	.36563	·		15°		
9 .40 <i>(</i> 53 4 .43083 4 .42772	.41139 .43586 .43226	.41520 .43958 .43577		19.981 39.757 59.980 80 .096		1.35782 .38169 .40653 .43083	
10			Guil1	aume, 1946			
n _D	%	n _D	-	%	t	ⁿ 57	780 Å
25° 33255 3555 3766	62.553 80.130 94.717	1 4099 5791 5738	=	6.26 12.20 23.53 37.10 49.85 63.69	20 20 19 20 20 20 21	.3 .3 .3 .4	3421 1488 1636 1793 1951 137 318
mann, 1927			_ =====				
mo1 %	n	He	Perkin	1, 1886			
25°	1 -	24750		composition	t	(α)	magn
11.65 15.24 30.40 37.59 49.75	. 3 . 3 . 4 . 4 . 4	36740 38297 39176 42075 42754 43559 43484		100 % (1+1) (2+1) (3+1)	20.25 20.16 20.75 23.00	0.7 0.8 0.9	7804 3775 9100 9272
	25° 33255 33555 3766 mann, 1927 mo1 % 25° 2.65 6.99 11.65 15.24 30.40 37.59	25° 33255 62.553 3555 80.130 3766 94.717 mann, 1927 mol \$	25° 33255 62.553 1 4099 3555 80.130 5791 3766 94.717 .5738 mann, 1927 mo1 % nHe 25° 2.65 1.34750 6.99 .36740 11.65 .38297 15.24 .39176 30.40 .42075 37.59 .42754 49.75 .43559 61.35 .43484	25° 33255 62.553 1 4099 3555 80.130 5791 3766 94.717 .5738 mann, 1927 mol	25° 33255 62.553 1 4099 3555 80.130 5791 3766 94.717 .5738 mann, 1927 mol % nHe 25° 2.65 1.34750 6.99 .36740 11.65 .38297 15.24 .39176 30.40 .42075 37.59 .42754 49.75 .43559 61.35 .43484	10 25° 62.553 1 4099 33555 80.130 5791 37.10 20	25° 62.553 1 4099 12.353 19.33555 80.130 5791 37.10 20 37.66 94.717 5738 23.53 19.353 19.

Perkin, 1893			Guillau	me, 1946				:
% (a)mag	n. (a)	nol nagn.		K	t	(0	u)magn.l	06
99.920 0.778 96.598 810 93.663 829 84.349 882 72.998 913 64.413 930 57.938 943 47.407 959 35.163 979 28.005 988	5 2.3 4 2.2 8 2.2 4 2.1 4 2.1 5 2.0 9 1.9 1.9	287 258 194 114 064 038 983 983	(α) _{magn} .	6.26 12.20 23.53 37.10 49.85 63.69 93 in radians	20 20 19 20 20 20 20 21 gauss,		3.820 3.674 3.390 3.042 2.728 2.408 1.805	
18,921 ,995 14,019 ,997 11,154 ,999 9,179 ,999	77 1,9	916 902 926 924	Okazaki,	Verdet's constant.	L05	K	Verde constan	t.105
Farabbaimar 1000				(3441 Å	28°		(3441	A)
Forchheimer, 1900 π (α)mol magn.	%	(α) mol magn.	10.34 21.30 25.16 34.12	4386 4340 4302 4286		43.15 55.15 65.26	4176 4057 3966	7
70.07 2.072 59.26 2.072 49.10 1.991	36.68 25.00 9.25	1.960 2.030 2.196	Mc Clung	and Mc Int	oeh 10	02		
			d	% X-r		d		-ray
Guerdjikova, 1910				absorp	tion			rption
% 25°	(α)mol magn.		1.321 1.165 1.085	99.0 95.7 88.0	'	1.043 1.021 1.000	74	9.7 1.4 5.4
0 18.972 36.327 62.553 80.130 94.717	5.068 4.823 4.723 4.478 4.331 3.917	i	Bell an	d Jeppesen,	1934			
71,717	3.917		Raman s					
			%	I I		es (cm ⁻¹) V	VI
De Mallemann and Guillaum (α)magn, falls first then rises slowly .	•	dilution,	100 95 75 50 25 10	363 55 395 55 417 57 425 58 425 58 433 59	7 906 5 909 32 887 32 887	-	1027 1027 1028 1041 1041	1123 1123
			Feneant	., 1948				
		:	Raman s	spectra (se	e autho	r).		

Decker, 19	26			Electrical	properties		
-		x					
		-0.6		Becker, 18	350		
22 48	.0 19.1 .0 19.3 .0 19.3	-0.5	5640				7 4-4-
77	.0 19.3	-0.4	1779	11	conductivity (conductivity).	ty : historica	il data
				Calbitial			
Farquharso	n, 1931						
- %	χ	%	Х				
99.45	-0.4022	42.44	-0.5649	Grotrian,	1874		
98.18 98.01	.4120 .4142	42.30 42.04	.5678 .5672	t	н	t	н
97.60 96.66	.4160 .4204	40.84 39.06	.5645 .5830		7.3	729 %	
95.06 94.03	.4321 .4333	37.40 36.84	.5857 .5894	9.33 13.51	2800 2957	43.45 50.34	4072 4280
92.25	.4397	35.95	.5921	30.24	3626	70.42	4816
88.42 84.50	.4438 .4399	$\begin{array}{c} 34.48 \\ 34.01 \end{array}$.6049 .6103	_		023 %	
84.18 83.98	.4384 .4467	31.94 2 9.11	.6122 .6107	8.29 13.46	4854 5241	$\frac{50.78}{57.11}$	7849 8201
82.34	.4362	28.75	.6132	30.34	6391	59.01	8143
79.68 77.58 75.03	.4476 .4540	27.49 26.97	.6095 .6141	33.86 36.68	6708 6936	67.83 69.62	8787 8817
75.03 70.58	.4642 .4784	24.84 24.21	.6263 .6273		20.4	134 %	
70.23	.4751	22.67	.6378	8.22	5874	55.80	10278
65.60 62.13	.4872 .5015	21.34 20.79	.6394 .6348	29.62 37.99	79 99 87 79	59.33 67.69	$10680 \\ 11143$
61.98 61.21	.5038 .5086	$19.51 \\ 19.48$.6369 .6365		29,1	61 %	211.0
59,69	.5128	18.89	.6483	6.34	6272	60.41	12610
59.05 56.56	.5153 .5233	$18.80 \\ 17.49$.6451 .6550	8.48 21.14	6618 8094	65.89	13221
55.77 54.49	.5254 .5318	16.72	.6613 .6670			174 %	
53.38	.5350	15.99 15 ,16	.6660	8.72	5868	39.47	9837
51.35 51.14	.5457 .5441	$14.98 \\ 14.59$.658 7 .6630	13.80 15.59	6556 6748	55.68 69.38	11855
48.36 46.31	.5535 .550 2	13.44 12.83	.6522	20.07		174 g	13618
45.60	.5520	11.45	.6514 .6692	8.14	5237	40.30	9183
45.60 44.36	.5548 .5622	$9.88 \\ 8.71$.6860 .6907	30.96 39.59	8006 9039	53.11 68.26	10576
44.24 44.07	.5641 .5618	6.40 3.19	.7010	37.07		062 %	12574
	*3010	3.19	.7185	7.73 19.52	4629	35.09	7603
				19.52 24.82	5904 6475	42.83 54.55	85 83 99 2 6
Pacault and	Chedin, 1950			26.83	6740	69.24	11698
%	χ	%	χ	31.67	7335 54 7	706 %	
	15°			8.59	4006	56.11	8839
0 10.4	-0.720 -0.683	58.5	-0.518	14.24 35.53	4545 6789	57.63 68.02	8914
23.0	-0.645	62.8 63.5	-0.504 -0.506	41.58	7287	00.02	10208
28.0 38.2	-0.623 -0.589	69.7 78.5	-0.485 -0.467			327 %	
40.2 45.9	-0.586 -0.565	90.5	-0.429	3.39 11.74	713 905	40.69 57.02	1821
49.0	-0.552	$\substack{98.2\\100}$	-0.409 -0.406	22.58	1214	70.18	2456 3048
55.8	-0.526						
Į.							

Kohlrausch, 1876				0.0 5.8	78.6 682.0 830.5	20.1 24.4	1316.6 1473.4
*	ж	τ,101		10.7 14.8	983.9 1124.0	29.8	1702.8
1.03 2.51 5.02	18° 471 1091 2067	- 121		0.0 5.7 10.0 14.9	76.2 814.8 957.5 1108.7 1286.7	19.7 24.3 29.0	1473.4 1672.8 1883.3
5.05 10.05 15.33 19.95 24.89 29.92	2110 3911 5493 6485 7123 7347	138		0.0 5.3 10.8 15.3	73.88 964.0 1128.4 1323.9 1504.6	19.3 24.1 30.5	1687.7 1895.8 2204.5
34.87 39.79 49.61 59.95 66.16	7212 6786 5434 3715 2716	174 213 236		Kunz, 1902	and 1903		
71.46 75.00	1938 1510	265 291		t	н	t	н
78.70 82.06 84.49 86.10 87.52 90.5	1179 1005 972 985 1014 1078	332 361 367 357 343 316		0 - 5.72 -10.70	19.1 5188.67 4776.00 3699.69 28.0	-15.12 -18.37	2657.59 1942.54
92.9 95.2 96.4 96.7 97.2 99.6	1090 1008 897 832 799	286 283 283 283 289		0 - 8.08 -16.36	5138.15 4304.50 3350.74	-19.83 -28.72 -32.33	3038.50 2204.38 1834.89
99.4	127 85	426		0 - 9.41 -14.25	4997.15 3977.32 3420.05	-19.79 -34.08 -44.55	3013.4 1679.0 659.58
Guthe and Briggs		t	ж	0 - 7.62 -15.53 -19.83	4805.95 4006.87 3175.93 2820.33	-28.69 -54.23 -66.80	1969.66 518.31 100.94
8.0 78	97 % 4.5 9.3 9.8 93.05 %	17.5 22.5 29.0	1036.1 1178.0 1 3 74.1	0 -10.90 -20.53	42.0 4472.95 3352.52 2610.59	5 % -28.35 -59.55 -74.34	2035.49 279.74 47.256
6.4 76 12.1 92	5.6 4.7 1.3 91 %	16.7 21.4 23.3	1050.6 1202.0 1440.0	0 -10.79 -20.63	45.4 4165.84 3123.44 2307.08	9 % -31.98 -58.76 -68.96	1466.09 206.45 49.202
12.3 91 17.0 104	88.6 %	22.9 23.2 28.8	1232 1254 1446	0 -10.48 -20.56	50.8 3571.35 2700.74 1936.31	6 % -28.55 -49.10 -66.08	1402.39 392.80 45.71
6.0 69 11.0 82 0.0 51	8.3 2.1 9.7 86.55 % 5.1	17.0 21.8 29.2	996.7 1154 1426 1026.6	0 - 9.91 -20.28	56.2 2842.83 2145.34 1528.69	6 % -25.47 -32.40 -51.85	1271.29 927.27 179.94
3.8 59 8.9 72 14.6 88	2.4 8.4 9.5 85.7 %	23.3 29.3	1175.1 1387.2	0 -10.49 -20.27	60.9 2320.69 1708.72 1236.55		718.66 193.93 13.12
0.0 49 8.0 67	7.2 5.5	15.5 23.0	891.1 1142.1		63.7		10.12
5.9 60	84.5 % 1.2 7.6 4.9 80.75 %	17.4 24.0 30.5	943.2 1172.7 1429.0	-10.16 -20.17	1929.19 1431.59 1020.67 70.4	-20.55 -56.06 -65.87	718.61 58.66 6.56
$\begin{array}{ccc} 6.0 & 70 \\ 10.0 & 82 \end{array}$	80.75 % 3.9 3.9 4.3	20.0 24.9 30.3	1147.0 1328.9 1545.5	- 9.89	1257.64 909.34	-20.02 -30.66	629. 15 374.09

	0.00 - 1.4
Jones, 1904 and Jones and Bassett, 1905 M molecular conductivity	9.90 mol \$\%\text{10.4} \\ 10.4 \\ 6225 \\ 62.0 \\ 12344 \\ 15.6 \\ 6900 \\ 69.0 \\ 13110 \\ 25.0 \\ 8015 \\ 76.2 \\ 13735 \\ 33.0 \\ 8908 \\ 82.0 \\ 14199 \\ 41.0 \\ 9750 \\ 88.0 \\ 14634 \\ 48.0 \\ 10405 \\ 88.8 \\ 14654
0°	48.0 10405 88.8 14654 55.0 11303
0.1 305.0 0.2 282.0 0.3 280.0 0.4 273.6 0.6 264.8 0.8 257.0 1.0 253.4 1.5 221.25 2.0 199.42	6.47 mol \$\\ \begin{array}{cccccccccccccccccccccccccccccccccccc
2.5 178.78 2.5 178.79 2.73 175.54 3.0 155.29 3.28 147.50 3.5 135.00 3.825 127.70 4.0 118.86	6.29 mol \$\\ \begin{array}{cccccccccccccccccccccccccccccccccccc
3,825 127.70 4.0 118.86 4.37 105.50 4.5 100.21 5.0 86.97	4.31 mol %
Felipe, 1905	16.4 6161 65.4 9699 22.6 6618 73.4 10183 28.4 7088 81.4 10631 35.4 7689 89.4 10981
t x t x	2.75 mol % 0.2 3921 48.4 6882
27.21 mol % 0 1767 49.4 4882 4.4 1995 55.4 5385 11.6 2407 61.8 5851 17.0 2700 68.4 6432 25.4 3284 74.8 7100 31.4 3673 81.6 7536 37.4 4047 87.4 8006 43.4 4479	5.6 4271 56.4 7286 11.6 4674 63.4 7589 16.4 4982 69.8 7816 24.4 5475 77.2 8180 32.4 6031 84.4 8414 40.4 6426 90.4 8627
17.88 mo1 %	Jones and Pearce, 1907
3.2 3204 45.4 7606 4.4 3589 51.6 8385	M molecular conductivity
7.4 3833 57.4 8801 11.4 4197 63.4 9439 16.4 4659 68.8 9971 22.6 5219 75.4 10574 28.8 5797 80.8 11131 34.4 6495 87.4 11813 39.4 6968	0° 0.010 398.34 0.025 353.41 0.050 335.56 0.075 323.43 0.010 314.42 0.25 296.30
13.08 mol % 1.4 4003 48.4 9087 6.4 4569 52.4 9494 11.4 5103 53.4 9573 17.0 5524 59.4 10244 23.0 6320 71.4 11221	0.25 296.30 0.50 281.52 0.75 271.25 1.00 259.05 1.50 234.38 2.00 209.28
23.0 6320 71.4 11221 31.4 7176 77.4 11669 39.4 8075 90.9 12647 42.4 8424	

1			!				
	and G.E, 19			Campbell, Kar			
<u> </u>	н ————	%	ж	%	×		н
60.78 58.45 54.45 50.86 46.43	3662.4 4056.6 4735.7 5329.0 6022.1	37.86 33.50 30.91 26.44	7057.4 7355.6 7418.4 7300.1	5.66 8.95 10.53 17.11 21.38 24.15 30.85 31.76	3058 4901 5714 8377 9767 10338 11117 11234	55.74 60.45 61.04 67.65 72.62 75.41 78.70 82.95	7541 6616 6364 4642 3620 3125 2729 2403
Rabinovit	ch, 1921			36.30 41.12	11133 10725	87.13 89.99	2347 2330
%	ж	%	н	43.45 52.15	10258 8538	92.8 96.2	2285 1782
5 10 20	2085 3915 6527	18° 70 80 85	2157 1105 980	53.12 5.66 8.95 10.53	8169 75 3442 5608 6345	53.12 55.74 60.45	11143 10035 8915
30 40 50 60	7388 6800 5405 3726	90 95 97 99.4	1075 1045 800 85	17.11 21.38 24.15 30.85 31.76	9791 11449 12351 13647 13747	61.04 67.65 72.62 75.41 78.70	8670 6594 5337 4764 4290
Vinal and	l Craig, 193	14 x		36.30 37.53 41.12 43.45 52.15	13869 13827 13566 13127 11349	82.95 87.13 89.99 92.80 96.20	3877 3699 3558 3456 2641
	15 %	20 % 25	% 30 %				
30 25 20 18 15	6266 5920 5556 5399 5176 4785 4388	7616 847 7163 793 6684 736 6489 713 6202 680 5693 622	2 8236 6 7628 7 7380 3 7013	Rosen, 1955	15°	и 20°	25°
5 0 - 5 -10 -15 -20 -25 -30 -35	4388 3980 3580 - - - -	5693 622 5203 565 4699 554 4200 554 3720 400 - 348 - 298 	6 5790 5 5181 6 4587 0 4016 4 3472	92.0 92.2 92.4 92.6 92.8 93.0 93.2 93.4	992 998 1003 1008 1012 1015 1016 1014	1165 1163 1162 1161 1159 1157 1155 1153 1150	1312 1311 1309 1308 1307 1305 1302 1298 1294
t	35 %	и 40 %	45 %	93.8 94.0 94.2 94.4	1007 1002 996 988	1146 1142 1136 1128	1290 1285 1279 1271
30 225 20 18 15 10 5 0 - 5 -10 -15 -20 -25 -30 -35 -40	8772 8123 7496 7246 6878 6242 5580 5005 4400 3850 3850 2800 2310 1890 1520 1190	8322 7686 7067 6816 6456 5848 5247 4660 4100 3560 3060 22590 2150 1750 1390 1100	7622 7032 6456 6221 5855 5305 4748 4217 3700 3230 2750 2320 1920 1570 1270	94.4 94.8 94.8 95.0 95.2 95.4 95.8 96.0 96.2 96.4 96.6 96.8 97.0 97.2 97.4 97.8	9081 972 962 952 942 932 921 910 898 885 871 856 839 818 795 771 742	1120 1112 1102 1092 1082 1071 1059 1047 1033 1018 1001 980 957 931 901 870 837 802	1271 1262 1252 1239 1227 1214 1199 1184 1168 1152 1135 1117 1097 1074 1047 1047 1018 988 957
<u> </u>							

m ·	rington, Hu	и	m *	_ · ·	и	N	ж		Dn (i	n %)		τ. 10 ⁴
		25				·		100atm		300atm		
0 0.00 0.00 0.01 0.02	119 1072 149	104.5 104.6 105.4 108.7	0.037 0.052 0.084 0.122 0.160	6 0	129.8 149.0 194.1 245.2 295.0	36 23.6 15.0 10.6 7.5 3.5 1.06 0.1 0.01 0.001	692.00 921.00 4271.00 5190.00 6642.00 5270.00 1820.00 28.79 3.37	-1.77 -1.26 -0.44 +1.42 2.19 3.10 2.82	- - - +4.26 5.73 4.97	-2.89 -3.12 -0.85 +2.76 6.02 8.13 7.06 6.20	-3.71 -4.91 -3.03 -0.97 +0.22 3.62 8.93 12.19 10.34 8.88	342 369 192 - 138 120 122 125
Wasif		fig.)										
		er) t	×			Ge1bsh	tein, Sho	heglova	and Tem	kin, 19	56	
	0 0.02 0.04	10.38 10.28 10.08	105 110 130			%		20°	40°	o 60°	80	•
Tanumar t 0 20 40 0 20 40 0 20 40 0 20 40 0 20 40	0.001N 8.80 6.60 5.90 16.7 11.4 10.1 23.3 14.9 13.4 27.8 17.9 16.4	0.01 N 50 11.7 10.4 10.4 10.4 21.9 18.5 19.1 30.2 25.8 26.4		1.0N 12.1 9.30 8.20 23.1 17.6 15.7 33.3 26.1 23.8 41.3 30.3 30.6	5.0 N 4.40 4.50 4.40 9.20 8.50 7.90 12.9 11.9 11.4	4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 88 488 92 98 100 Ho =		0.10 0.42 0.66 0.92 1.18 1.46 1.75 2.33 2.33 3.37 3.30 3.37 3.80 4.82 5.42 5.42 5.42 8.62 9.50 9.50 0.65	0.29 0.15 0.40 0.70 0.95 1.21 1.48 1.75 2.03 2.33 2.66 3.36 3.77 4.74 5.32 6.43 7.05 8.40 8.90 9.30 10.40	+ 0.28 - 0.20 - 0.74 - 0.98 - 1.23 - 1.50 - 2.33 - 2.66 - 3.36 - 3.73 - 4.67 - 5.28 - 6.93 - 7.92 - 8.30 - 7.92 - 9.10 - 10.15	- 0. - 0. - 1. - 1. - 1. - 2. - 2. - 3. - 3. - 4. - 5. - 5.	25 54 78 10 26 55 55 75 33 36 60 35 70 96 60 13 68
0 20 40	31.1 20.5 18.3	35.2 36.6	kg 54.8 51.0 48.8	47.7 40.1 37.2	18.6 17.8 16.9							
0 20 40	32.5 22.1 19.2	3000 43.9 38.1 39.7	kg 61.3 56.8 68.1	51.7 42.7 42.0	21.1 19.9 18.8							
_	= λ at 1 k	g/cm ²										

				T			
Thermal con	nstants			Biron, 1899			
				<u> </u>	U	%	U
Person, 18	351				20	0°	
mol %	U	mol %	U	100 97.44	0.3352 .3404	31.21 30.34	0.7584 .7647
100.0 84.7	0.3095 0.4330	75.9 51.0	0.4534 0.5851	94.82 91.81 89.36	.3554 .3786 .4016	29.52 28.00 26.63 25.39	.7717 .7837 .7948 .8041
Lundquist,	1869			85.48 84.48 82.48 77.91	.4343 .4408 .4466 .4517	24.26 23.22 22.27 21.38	.8122 .8203 .8277 .8339
d		heat conduc	tivity (.10 ⁴)	73,13 64,47 57,64	.4628 .5012 .5420	15.36 9.82	. 8768 . 9171
				52.13 47.57	.5805 .6152	5.163 3,502	.9551 .9688
0.9992 1.112 1.195 1.361	40.8 1 43.7 0.847 44.5 0.781 40.5 0.621	. 868		43.75 40.49 37.69 35.25 33.11	.6475 .6776 .7020 .7231 .7412	2.650 1.343 0.6759 0.3391	.9763 .9877 .9937 .99675
Pfaundler,	, 1870						
t final	anhydre	บ (1+1)	(2+1)	Kremann and	Kerschbaum,	1907	
	t initial =		(2+1)	t	U	t	U
60		-	0.442		50 m	· ·	
70 80 90 100 110 120 130	0.355 0.356 0.358 0.359 0.360 0.362	0.444 0.447 0.450 0.454 0.458 0.461 0.465	0.446 0.450 0.455 0.459 0.462 0.466 0.470	33.7 40.4 55.7 55.8 65.9 74.9	0.429 .424 .416 .426 .435 .428	99.4 107.4 134.0 173.0 179.5 207.1	0.428 .440 .410 .443 .433 .453
140 150 160 170 180	0.364 0.365 0.367 0.370	0.469 0.472 0.475 0.479 0.482	0.474 0.478 0.482	Hartung, 19	15		
				mol %	U	mol %	U
				1 15	17		0.753
	370, 1871 and 188			1,15 2,36 4,51	0.947 .909	7.86 10.7	0.751 .681
mol %	U	mo1 %	<u> </u>	4.51 5.66	.842 .807	14.2 17.1	.615 .574
16.5 9.1 4.8	0.545 0.700 0.821	2 1 0.5	0.918 0.956 0.977	Pascal and	Garnier, 1920		
				× ×	v	%	U
Cattaneo,	1889				20		
mol %	U	mo1 %	U	0 10.0	$\frac{1}{0.916}$	64.0 78.44	0.507 .448
100 91	at room to 0.332 0.342	emp. 15.5 3.9	0.593 0.850	14.0 25.0 35.0 42.0	.903 .801 .725 .670	85.0 93.25 96.0 100	.426 .375 .360 .335
80 74.5 66.7 50	0.351 0.369 0.386 0.441	1.96 1.32 0.99	0.912 0.943 0.959				

Agde and Hol	tmann. 1926			Randall	and Taylor, 19	41	
%	U		U	 m	U	m	Ŭ
1 2 3 3 4 4 5 5 6 6 7 7 8 9 9 10 11 12 13 13 14 15 16 17 18 19 220 21 22 23 24 25 26 27 28 29 30 \$\$Socolik, 1932 \$\$\$\$\$\$\$\$\$\$\$	U 25° 0.990 .985 .978 .970 .960 .950 .945 .935 .925 .918 .910 .903 .895 .885 .880 .870 .861 .855 .845 .839 .831 .824 .815 .809 .794 .785 .765 .760 2 60° 0.948 .901 .852 .814 .765 .760 .715 .684 .664 .626	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 55 60 65 70 75 80 95 100	0.750 .744 .736 .720 .713 .705 .695 .689 .689 .665 .658 .650 .643 .635 .628 .621 .614 .606 .570 .535 .535 .504 .473 .448 .424 .404 .380 .356 .335	m 0.0444 0.0704 0.0704 0.0713 0.1748 0.3722 0.5515 0.8054 Hornung, t -258.39 -255.88 -253.31 -252.01 -248.91 -245.43 -236.74 -224.39 -212.24 -206.27 -199.88 -193.10 -186.21 -179.15 -172.02 -59.42 -51.91 -43.82 -35.62 -27.23 -18.55	U 0.99821 .99857 .99854 .99921 1.00249 .00483 .00921 Brackett and G U (cal/mole) (6+1) 1.93 3.02 3.88 5.13 6.60 8.24 10.09 11.97 15.81 18.08 20.20 22.17 24.25 26.15 27.77 29.38 31.11 (6+1) 115.84 117.54 119.29 120.74 122.22 123.60 (6. 126.89 126.89 126.89 126.89 126.89 130.40 131.50 133.13 (8	1.2423 1.4580 1.4580 1.4580 1.4580 1.4580 1.4580 1.4580 1.8771 2.2300 1.412.2300 1.412.2300 1.43.60 1.43.60 1.43.60 1.43.60 1.44.75 1.07.86 1.01.00 1.22.04 1.14.75 1.07.86 1.01.00 1.23.45 1.12.04 1.14.75 1.07.86 1.01.00 1.23.45 1.20.40	1.01334 .01808 .02310 .02374 .03374 .04252 U (cal/mole) 32.79 34.45 36.03 37.68 39.28 40.91 42.59 44.25 45.84 47.42 49.07 50.75 52.27 55.23 58.51 61.23 124.75 125.76 126.33 126.85 127.04
60.10 65.00 66.10 72.20 78.10 82.20 84.48 85.00 85.50 87.60 88.90 92.50 96.00 100.00	.542 .516 .510 .487 .468 .457 .448 .446 .444 .432 0.391 .364		. 363 . 548 . 524 - 0.499 0.464 . 455 . 455 . 452 . 449 . 438 . 429 . 399 . 374 . 359	- 52.34 - 44.35 - 36.45 - 28.64 - 20.56	146.47 149.48 153.11 155.91 158.29	- 3.26 + 5.49 + 14.03 + 22.52	161,92 163,38 163,89 164,19

Rumelin, 1907			Vrevski	and Nic	olski, 192	7		
% t	Q mix (by mole wate	er)	%		Q vap (cal/g)	%		Q vap (cal/g)
74.00 11.45 73.78 - 73.58 13.10 61.92 15.20 61.85 15.65 61.79 15.80	+1264 +1278 +1265		17.1 23.0 28.1 36.8	5 5	79 553.6 556.9 558.8 566.6	.3° 42.7 49.1 56.9	2	576.0 588.1 615.0
35.05 16.00 35.00 16.25 24.95 14.20 24.90 14.35 20.64 15.80 20.60 15.80 14.62 12.10 14.52 12.50	+ 218.7 + 70.8 + 71.6 + 33.79 + 33.30 + 10.89		Beetz,	1879	relative h 8-14°	eat cond	uc tivi ty 28-36°	,
			1.08 1.49	3 6 ————	409 404		615 524	
Brousted, 1910								
mol % Q mix (by mole acid)	mol % (by mo) mix ole acid)	Jäger,					
90.9 806 83.3 1586 76.9 2331	6. 7	15580 16660 17600		0 30	rel	ative he		ictivity
71.4 3054 66.7 3750 62.5 4418 58.8 5054	0.50 0.37	17640 17760 17900 18120		60 90		7:	2.2 8.4	
55.6 5654 52.6 6212 50.0 6720 40.0 8790 33.3 10020 25.0 11640 20.0 12830	0.20 0.16 0.13 0.08 0.063 0.040 0.032	18230 18360 18500 18820 19040 19400 19660	Water	+ sulfaı	nic acid (H ₃ O ₃ NS)		
16.7 13710 14.3 14370 12.5 14890	0.016	19900 20150 20430	Schmel	zle and	Westfall,	1944		
11.1 15260			N	đ	"(water=1)	N	d	η (water=1)
Pickering, 1890		•	0.1303	1.0034	2 1,0161	5° 0,6736	1.0319	1.0644
% Q dil, integral (100 g water)	% Q dil.	integral g water)	.1788 .2579 .3773 .4676	.0064 .0103 .0166 .0214	.0163 .0280 .0349 .0450	.7331 .9693 1.1951 1.6445	.0331 .0466 .0587 .0811	.0707 .0902 .1145
100 21563 99.473 21215 97.030 19627 94.233 17885 91.592 16280 89.095 14840 84.488 12460 78.407 9995 73.142 8363 64.483 6193 57.656 4828 52.137 3918 49.757 3552 47.582 3252 37.701 2088 29.526 1399	5.215 188 4.377 161	941 748 381.5 330-313 3.5-182.9 .0-152.7 '.7-138.5 93.8 41.55 30.00 17.54 8.00 7.37 1.085 0.403	.4974	.0229	.0551	2,0724	. 1025	.1668
		====						:

WATER + AMMONIUM FLUORIDE

LXVIII. WATER + ANMONIUM SALTS	Guillaume, 1946
Water + Ammonium fluoride (NH ₄ F) Yatlov and Polyakova, 1945	% d
% f.t. % f.t.	20°
5.0 -4.1 41.0 -16.8 E 10.0 8.2 41.81 0	4.48 1.0292 22.50 1.0785
15.0 12.1 42.55 +10 20.0 14.7 45.25 20 25.0 20.7 47.05 30 30.0 24.9 49.81 45 32.3 26.5 E 52.62 60 39.2 -19.0 (1+1) 54.05 80	Grufki, 1913
	mo1% % n Hα Hβ Hγ
	18°
Jdanov and Sarkazov, 1955	0 0 1.33141 1.33736 1.34059 0.5122 1.88 .33414 .34013 .34333 1.050 3.83 .33656 .34258 .34580 2.110 7.56 .34069 .34678 .34999
£ f.t.	4.121 14.45 .34700 .35318 .35650
41.62 0 45.31 25	
52.01 40	Guillaume, 1946
	% n *(α)magn.106
Zaromb and Brill, 1954 (fig.) and 1956	20°
% f.t.	4.48 1.3399 3.957 22.5 1.3537 3.809
5.0 - 4.1 10.0 - 8.2	*in radians, gauss, centim.
15.0 -12.1 20.0 -14.7 30.0 -24.9 32.3 -26.5 E ice + (1+1)	Water + Ammonium acid fluoride (H_5F_2N)
L C	Yatlov and Polyakova, 1945
0.1 5 0.002	% f.t. % f.t.
10 1.5	5.0 -3.4 61.00 +60 10.0 -6.5 74.53 80 15.0 -9.4 85.55 100 20.0 -12.6 86.0 99.5
Grufki, 1913	23.6 -14.8 E 89.0 104.6 28.45 0 92.0 110.5
nol% wt% d	31.96 +10 94.0 114.0 37.56 20 100.0 126.1 50.05 40
18° 0 0 0.99967	
0.5122 1.88 1.00816	Jdanov and Sarkazov, 1954
1.050 3.83 .01708 2.110 7.56 .03260 4.121 14.45 .05626	% f.t % f.t
	32.87 0 53.03 40 43.73 25 54.15 50

Water + Ammonium chloride (NH ₄ Cl)	Pearce and Pumplein, 1937
Heterogeneous equilibria	M p M p
	25°
Tammann, 1885	$egin{array}{cccc} 0.0 & 23.752 & 2.5 & 21.841 \ .1 & 23.673 & 3.0 & 21.462 \ \end{array}$
t p p 0% 5.67% 19.60% 22.20% 32.43%	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	.6 23.281 4.5 20.338 .8 23.125 5.0 19.974 1.0 22.970 6.0 19.250 1.5 22.588 7.38 18.281 2.0 22.215 satd.
40.59 57.1 - 49.3 48.2 43.0 45.71 77.7 - 62.2 60.5 54.7	1.0 22.970 6.0 19.250 1.5 22.588 7.38 18.281 2.0 22.215 satd.
51.51 99.7 - 85.6 83.0 74.6 70.49 238.8 - 205.3 198.8 177.8 76.27 305.0 295.7 262.9 254.8 227.6	
80.74 366.3 354.2 315.6 305.1 272.2	
93.68 581.8 564.3 502.1 485.6 - 96.63 673.0 653.5 581.6 562.8 -	Legrand, 1835
100.00 768.1 744.4 664.9 642.3 -	% b.t. % b.t.
, p % p	7.23 101 34.85 109 12.20 102 37.46 110
100°	16.46 100 00.00 111
6.08 731.4 27.43 601.7 9.07 716.7 30.54 575.4 14.36 687.6 34.07 552.8	10.46 103 39.90 111 20,13 104 42.30 112 23,38 105 44.60 113 26,31 106 46.84 114 29,23 107 47.06 114.2 satd. 32,11 108
9.07 716.7 20.43 601.7 14.36 687.6 34.07 552.8 17.25 667.6 38.37 515.0 21.97 635.6	29.23 107 47.06 114.2 satd. 32.11 108
21.97 635.6	
Edgar and Swan, 1922	De Heen, 1881
t p t p	% b.t.
sat.sol. 19 12.95 25 18.84	10.62 103.5 17.42 105.0
19 12.95 25 18.84 20 13.90 26 19.91 21 14.83 27 21.03 23 16.79 28 22.20 24 17.80 29 23.42 30 24.66	
23 16.79 28 22.20 24 17.80 29 23.42	
30 24.66	Gerlach, 1886
	% b.t. % b.t.
Mondain Monval, 1923	
	1 15.97 103 38.23 111
16.7% 15° p= 6.44mm	19.80 104 40.41 112 22.90 105 42.60 113
	25.71 106 44.64 114 28.37 107 46.55 114.8
Adams and Merz, 1929	
t p t p	
sat.sol.	
$egin{array}{cccccccccccccccccccccccccccccccccccc$	
15 10.15 40 40.81 20 13.92 50 65.92 25 18.12	

Buchanan, 1899		Johnston	, 1907		
% b.t %	b t	N	b.t.	%	b.t.
742.0-743.3 mm 44.00 113.79 21.52 44.22 113.45 19.84 39.14 111.13 18.06 35.04 109.11 16.30 30.11 107.13 14.33 27.41 106.13 12.22 24.52 105.14 0 620.0 mm 44.14 107.89 26.66 41.98 106.84 23.59	104 16 103 66 103 14 102 66 102 16 101 65 99 33	0.141 .412 .793 .825 1.055 1.255 1.531	100,128 100,363 100,573 100,760 100,892 101,076 101,329	9.6 12.1 14.7 16.9 19.9 22.0 25.3 27.4 30.1 32.3	8 103,344 4 104,160 3 104,880 7 105,813 8 106,598 2 107,564
37. 25 104. 82 20. 20 34. 82 103. 81 15. 40 32. 28 102. 80 0 30. 14 101. 79	98.74 97.73 94.40	Jablezyn	nski and Ko	n, 19 2 3	
619.9 mm 44.67 107.74 34.11	103.31	m	b.t.	m 	b.t.
44.28 107.74 33.79 44.00 107.50 32.05 43.79 107.50 31.22 41.51 106.34 28.54 40.02 105.73 28.34 39.09 105.33 25.34 36.62 104.37 22.05	103.20 102.79 102.19 101.28 101.18 100.17 99.16	3.818 6.281 8.255 10.288	100.357 100.578 100.757 100.942	12.309 14.590 16.731 18.970	101,128 101,338 101,535 101,749
35.45 104.22 0 550.35 mm	94 - 25	D. 3 66	70/1		
60.54 104.16 31.11 42.88 103.97 28.31 38.77 102.13 25.32 36.27 101.12 21.99	99,09 98 08 97.07 96.05	Rudorff,	f.t.	% 	
non satd.	91.20 100.51 100.31 100.20	1.96 3.85 5.66	-0.65 -1.35 -2.6 -3.9	9.09 10.71	-5.2 -6.5 -7.8
18.47 103.55 4.94 14.10 102.54 3.96 13.00 102.03 3.70 10.93 101.52 3.16 9.04 101.02 2.57 8.11 100.82 0 7.04 100.71	100.20 100.10 100.00 99.90 99.46	Mulder,	1866 f.t.	 %	f.t.
				-	ني يې ني بيد دې يې ني سي مو شر يې دي شواند يې سو اند اند اند اند اند اند اند اند اند اند
Johnston, 1906 % b.t.		22.90 23.61 24.58 26.09 26.42 27.90 29.18	0 4.25 8.50 15.50 16.50 25 29.75	33.20 34.30 39.69 43.08 46.41 46.61	49 55.3 80 98.4 115 115.75 b.t.
34.49 108.890 36.34 109.292 38.49 109.517 40.63 109.812 43.18 109.952		Nordensk i	iold, 1869		
			f.t.		f,t.
			0 6.2 10.8		31.6

de Coppet	, 1872	ني ني دي الله الله الله عن الله الله الله الله الله الله الله الل	د . مين المدادات هي دين چين الله الجو شهر شيد تين شم الجور ه	Biltz ar	nd Marcus,	1911		
%	f.t. %	f.t.	المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا المنا	%	ين المن المور المراجعي عند الماء المنا المنا الماء	f.t.		
1.96 9.09 10.71 12.28	-1.3 13. -6.65 15. -8.0 16. -9.45	79 -10.9 25 -12.2 67 -13.7		23.81 27.80 33.15		3.5 25 50		
Guthrie,	1876			Scheffer	, 1915 f.t.	 %	f.t.	
%	f.t.	% f.1		J)				,
1 3 5 7 10 13 15 16 17	-0.4	18 -15, 19 15, 19,27 16, 20 15, 22 -5, 23,2 0, 25, +8, 30 +32	.0	55.80 56.31 57.07 57.41 58.33 58.55 58.80 58.85 59.34 59.50 59.39 59.67	162.9 165.65 169.5 172.0 176.1 177.2 178.55 181.95 181.75 182.2 183.05	59,93 60,33 60,54 60,64 60,64 61,23 61,74 61,92 62,51	184.55 187.3 187.9 189.1 190.15 191.7 194.7 199.1 200.5 205.0	tr.t.
Mohr, 18	388 f	.t.		Rodebusc	h, 1918	- MAN SAN SAN SAN SAN SAN SAN SAN SAN SAN S	سور بين جان التي التي فيو الذي الله الله الله الله الله الله الله الل	* gard and the sear sear sear sear the sear sear sear sear
11.73				·		8	f.t.	. مدر می صر میدادیو م ده بدر می میدادی است.
12.88 14.06		25 35 45		ii .	-5.73 7.63 7.80			
%	f.t.	%	f.t.			ني بدم شير مين مين بدي احد ادم ادم مين اد	نیو میں میں کی الحد الحو الحد الحد بیت الحد الحد الحد الحد الحد الحد الحد الحد	=========
0.7 1.9 2.7 4.6 6.6 9.2 11.4 13.1 15.3 16.7	- 0.45 - 1 25 - 1 70 - 3.05 - 4.45 - 5.40 - 8.25 - 9.70 -11.90 -13.25 -14.70	18 9 19 5 E 19 7 20 0 20 3 21 1 21 7 22 3 22 6 22 7	-15 40 -16 0 E -15 0 E -12 2 -10 9 - 7 4 - 5 6 - 2 3 - 1 1	Neumann c 	and Domke	f.t. 20 30 40		
		التي وقت التي التي التي التي التي التي التي الت				nd al., 19		
Jones, 15	904; Jones and	d Getman, 1904	i	% %	f.t.	%	f.t.	
1.0 2.0 3.0		f.t. -3.703 -7.550 11.700	ر بور بور بدر اس این هم نیز بر این این این این این این این این این این	48.9 51.1 54.6 59.1 62.4 66.2 66.7	129 142 164 191 211 236 241	67.7 70.4 74.5 77.8 80.2 85.6 90.8	246 267 294 318 339 377 417	
						ر سین منتر شدر شدر سین منتر شدر شدر شدر شدر شدر شدر شدر شدر شدر شد		=======================================

	m ₁ m ₂ m ₁ m ₃	
Polosin, 1946	0.2026 0.2029 5.043 4.268 0.3834 0.3830 5.244 4.398	
% f.t. % f.t.	0.7141 0.7134 5.352 4.472	2
0 0 19.0 -14.5	1.087 1.085 6.580 5.278	3
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.407 1.405 6.659 5.323 1.589 1.586 6.919 5.485	5
$\begin{bmatrix} 8.4 & 5.3 & 24.8 & 9.4 \\ 10.9 & 7.5 & 26.9 & 19.9 \end{bmatrix}$	2.055 2.050 7.209 5.661 2.563 2.544 7.328 5.732	
13.5 9.5 28.8 28.5	2.563 2.544 7.328 5.732 2.673 2.655 7.390 5.768 2.763 2.739 (satd.)	
15.9 11.8 30.7 38.5 18.21 -13.9 32.0 43.1	3.028 2.996 3.880 3.813	
	4.647 4.626	
	$m_1 = NH_{14}C1$ $m_2 = KC1$ $m_3 = NaC1$	
Stackelberg, 1896	Hall, Wishaw and Stokes, 1953	
P % f.t.	M D M D	
1 27,2 18,5	25°	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$egin{array}{ccccc} 0.0698 & 1.857 & 0.8626 & 1.902 \ 0.0760 & 1.848 & 1.4050 & 1.976 \ \end{array}$	
	0.1042 1.838 1.8759 2.030 0.2258 1.837 2.8182 2.151	
	0.3768 1.848 3.640 2.210 0.5121 1.865 4.558 2.258	
	0.6756 1.883 5.285 2.264	
Denecke, 1919		=
P Kg f.t.	Proporting of phages Descited	
1 ice I -15.8 350 -17.5	Properties of phases . Density .	
$-\frac{17.5}{22.5}$		
2028 -32.4 2215 tr.t. iceI-iceIII -34.4	Bischof, 1850	
$\begin{bmatrix} 2410 & 1ce & 111 & -32.5 \\ 2520 & -31.2 \end{bmatrix}$	% d % d	
2800 -29.4 2890 -29.1	18 . 75°	
3130 -28.0 2159 tr.t.iceI iceIII -66	2 1.0049 16 1.0460 4 .0101 18 .0515	ļ
	6 .0172 20 .0571	
	8 .0232 24 .0681 10 .0291 26 .0736	
	12 .0348 27 .0763 14 .0405	
Wishaw and Stokes, 1953		
M osmotic m osmotic	Schiff, 1858 and 1859	
coeff. coeff.		
$egin{array}{cccc} 0.1 & 0.927 & 1.8 & 0.906 \\ .2 & .913 & 2.0 & .909 \\ \end{array}$	7 d % d % d	
.3 1906 2.5 1918		0
.3 .906 2.5 .918 .4 .901 3.0 .926 .5 .899 3.5 .936 .6 .897 4.0 .945 .7 .896 4.5 .953	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	/
.6 .897 4.0 .945 .7 .896 4.5 .953	2 .0042 13 .0364 23 .064; 3 .0071 14 .0393 24 .067; 4 .0100 15 .0422 25 .060;	3 1
.8 .896 5.0 .958 .9 .896 5.5 963	5 .0129 16 0451 26 072	7 4
1.0 897 6.0 .969 .2 .898 6.5 .973	6 .0158 17 .0479 27 .0751 7 .0187 18 .0506 28 .0777	į 7
1.0 .897 6.0 .969 .2 .898 6.5 .973 .4 .900 7.0 .976 .6 .903 7.39 .977	8 .0217 19 .0534 29 .0803 9 .0247 20 .0562 30 .0829	3
.6 .903 7.39 .977 (satd.)	10 .0277	
		_

Gerlach,	1859			Sch	umann,	1877				
	d %	d						d		
	15°	\		<u>~</u>		d 15		u		
0 1 2 3	0.99913 14 1.00229 15 .00545 16 .00861 17	1.04235 .04433 .04714 .04995 .05276		0 2. 11.	29 62 	0.9991 1.0063 1.0346		1.08 .00 .01	516 6 27 757	
0 1 2 3 4 5 6 7 8 9	.01492 19 .01792 20 .02092 21 .02392 22 .02692 23	.05656 .05837 .06112 .06387 .06761			rian,	1877 d	رفي چيدر شفي جور مندو است د			
10 11 12 13	.02992 24 .03280 25 .03568 26 .03857	.06936 .07211 .07282				1.0153 .0300 .0443 .0582				
Buligins	kv. 1868			14.48 19.29	10.55 10.65	.0443 .0582	18.80 17.42	.0421 .0561	29.96 27.59	.0390
*	đ	4	đ							
	15°			Kohl	rausch	, 1879				
0 5,247	0.99918 1.0156	20.449 25.242	1.0587 1.0721]] 	%	đ		%		d
13.645					5 10 15	1.01 1.02 1.04	18 42 89 30	20 25	1	.0571 .0710
van der W	illigen, 1869	و من جود الله الله الله الله الله الله الله الل								
%	d %	d	موجد مند مد مرجو بي بي مرجو بي موجو	1	kmann,					
	26.30°			%		d 	%	d		
9.72 11.79 14.51	1.02597 19.58 .03202 19.68 .04004 24.83	1.05364 .05399 .06757	د الله الله الله الله الله الله الله الل	0 9.6 18.3 26.4	16° 0 7 1 11 4	.9990 .0281 .0535 .0758	15-1 13.02 26.01	6° 1.0388 1.0750		
Thomsen	1971			=====						
mo1%	d mol%	d		Ben	der, 1	883				
	18°			М		d	М	d		
0 0.5 0.9 1.7	0.9986 3.9 1.0044 9.0 .0086 11.7 .0167	1,0314 .0664 .0718		11		15° 9991 015 7 0308		1.0451 .0587 .0728		
Kohlraus	sch and Grotrian, 1	1875			ube, 1	885			مور است احد است است است است است است است است است است	
18	đ	*	d	J [%] -		150	d			
5 10 15	1.0142 1.0289 1.0430	20 25	1.0570 1.0724	0 9. 18.	77 94	15°	0.9991 1.0295 1.0562	=======		======================================
				1						

		_				
Bender, 1887		Cheneveau	1907			
n e e e e e e e e e e e e e e e e e e e	τ.10 6	%	d	 %	d	
15-20	0° 20-25°			9°		
1 1.0157 1096 2 .0308 1258 3 .04511 1386 4 .0587 1486 5 .0728 1574	1415 1510 1586	0 5.13 10.10 12.54	.0362	14.94 19.68 24.25	1.0427 .0563 .0695	
		20.31	1.0605	(9.80)		
Charpy, 1893			ستان کی کلی کار این این این این دید دید کار کار این کار کار این این کار این کار این کار این		ے حصور میں انہوں انہوں جس انہوں میں انہوں انہوں انہوں انہوں انہوں انہوں انہوں انہوں انہوں انہوں انہوں انہوں ان	حد دین مید مند مند امن دین مید مند احد امر ام
% d %	d	Getman,	1908			
0°	1-	M	d	M	d	·
0 0.9999 14.3232 1. 3.4802 1.0113 17.6641 . 7.2572 .0234 21.0299 . 11.0112 .0351	05156 0561 0665	0 0.4437	0.9991 1.0071		1.0331 .0394	
:======================================	=======================================	1.3311 1.7748	.0204 .0268	2.2185 2.6622 3.1059 3.5496 4.4370	.0458 .0516 .0630	o man again again again again again again again again again again again again again again again again again ag
Brückner, 1891						
M d M	d	Schneider	r. 1910			
15°	-	~~~~~~~		 М	d	
0.0 0.9992 2.5 1, 0.5 1.0073 3 0.75 .0118 3.5 1 .0153 4 1.5 .0231 4.5 2 .0306 5	.0376 .0445 .0520 .0582 .0648 .0712		18 0.99862 1.00032 .00215 .00711			
Schiff and Monsacchi, 1896		Herz, 191	14 and 191	7	500 and 600 and and and and and and and and and and	
% d %	d	N		đ		
19°			25°			میں ہی جینے میں میں میں میں میں امس الم
0 0.9984 20 1. 5 1.0145 25 1. 10 .0293 30 15 .0498	0579 0714 0846	0 1.268 2.536 3.803 5.071		0.9971 1.0164 .0346 .0520 .0680		
Grabowsky, 1904 % d				r and Zept		
10° 18°	30°	c	d	C	d	
9.11 1.0288 1.0263 1. 18.47 .0555 .0528	.99567 .0220 .0487 .0657	5.7244 5.818 11.631	25° 1.0146 .0141 .0294		1.0312 .0594 .0600	

De Block, 1925	Spacu and Popper, 1934
% d % d	8 d 8 d
11.5°	20°
0 0.9996 11.8 1.0367 2.65 1.0084 18.9 .0565 5.27 1.0162 24.2 .0715	0 0.99823 16.362 1.046761 10.685 1.03066 21.358 .060480 16.043 1.04588 26.467 .074492
Jessen-Hansen, 1927	Pearce and Pumple m , 1937
% d % d	M d M d
18°	25°
0.999 1.00184 15.22 1.04309 1.000 .00179 17.31 .04980 1.96 .00489 19.33 .05538 2.91 .00789 21.24 .06072 5.65 .01437 23.06 .06571 8.25 .02388 24.78 .07026 10.70 .03101 24.80 .07027 13.02 .03768	0.0 0.997074 1.0 1.012644 .1 0.997890 2.0 .026015 .2 1.000451 3.0 .037810 .4 .003665 4.0 .048315 .6 .006759 5.0 .057796 .8 .009753 6.0 .066455 .7.38 .077299 (satd.)
Geffcken, 1929	Guillaume, 1946
m d m d	d
25∘	20°
0 0.99707 4.5897 1.05409 1.1619 1.01499 6.484 1.07043 2.2680 1.02938	6.9 1.0215 19.9 1.0584
Shibata and Hölemann, 1931	De Heen, 1881
m d m d m d	t rel.vol, t rel.vol, 17.42% 10.62%
m d m d m d 25° 35° 45° 0 0.99707 0 0.99406 0 0.99024 1.8774 1.02453 1.5881 1.01746 1.8916 1.01751 3.6504 .04482 1.9538 .02213 2.5178 .02505 4.6914 .05509 2.7594 .03170 4.1464 .04232 6.7500 .07260 4.7845 .05233 6.7529 .06482 6.7495 .06878	10.00 1.000000 10.00 1.000000 15.20 .001378 14.60 .000975 20.42 .002873 19.75 .002279 33.52 .006092 27.32 .004433 39.04 .009150 35.51 .007110 51.41 .014047 43.74 .010063 59.01 .017385 50.92 .013054 66.08 .020653 60.32 .017395 73.33 .024237 70.68 .022757
Andersen and Asmussen, 1932	Schumann, 1877
00	15°
12.54 1.0407 19.54 1.0596	2.29 45.9 17.58 41.1 11.62 41.5 21.58 36.5

Schmidt, 1859	Getman, 1908
% t π	<u>м</u> п М п
5.9 18.0 43.6 13.0 18.0 40.5 22.6 17.3 37.0	0 895 2.2185 878 0.4437 889 2.6622 887 0.8874 885 3.1059 897 1.3311 882 3.5496 904 1.7748 880 4.4370 925
Braun, 1887	
0 % 22 %	Herz, 1914 and 1917
t π (apparent) t π (apparent)	N η (water=1) Ν η (water=1)
0.6 33.47 1.0 33.80 17.8 32.25 22.1 32.40	0 1 3.803 1.014 1.268 0.998 5.071 1.037 2.536 1.002
Busz, 1938	
% sound velocity d	Schneider, 1910
m/sec.	М п М п
14-16° 0 1480 1.0 5.2 1520 .02 12 1570 .04 24 1660 .07	18° 0.1 996.1 1 976.6 0.2 994.4 2 962.6 0.5 986.7 4 967.7
Viscosity and surface tension	Tammann and Rabe, 1928
	0° 10° 30° 75°
Grotrian, 1877	5.08 1678.9 1255.4 806.7 398.8 9.66 1691.3 1225.8 809.4 414.9
t n t n	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
4.86 % 9.64 % 10.66 1235 9.85 1238	21.10 1498.5 1209.3 839.9 454.2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Buliginsky, 1868
10.89 1175 9.71 1215 20.34 966 20.04 988	% o % o
31.35 794 30.22 829	15° 0 73.26 20.449 79.07 5.247 74.76 25.242 80.63 13.645 77.04
Bruckner, 1891	
M η M η 15° 20° 15° 20°	Volkmann, 1882
0,0 1143.9 1008.6 2.5 1086.2 978.9	% 0 % 0
0.5 1126.7 999.2 3 1082.6 979.4 0.75 1118.3 994.0 3.5 1081.0 981.3 1 1112.9 992.4 4 1086.1 989.7 1.5 1100.0 984.5 4.5 1090.6 996.7	16° 0 73.1 18.31 78.6 9.67 75.9 26.44 81.0
1.5 1100.0 984.5 4.5 1090.0 990.7 2 1091.3 980.6 5 1106.5 1010.8	13.02 77.0 15-16° 26.01 81.0

Traube, 1885	Optical and electrical properties
g o	
15°	van der Willigen, 1869
0 73.26 9.77 74.79	spec- n
9.77 74.79 18.94 77.51	lines 9.72% 11.79% 14.51% 19.58% 19.68% 24.83%
ر است موادر الحال الموادر الم	26,30°
	A 1.34669 1.35045 1.35559 1.36468 1.36500 1.37446 a .34752 .35137 .35647 .36565 .36594 .37546 B .34825 .35212 .35726 .36646 .36670 .37627
0chse, 1890	a 34752 35137 33547 335565 36590 137440 B 34825 35212 35726 36646 36670 37627 C 34898 35292 35805 36727 36759 37714 D 35098 35495 36015 36948 36980 37947
t a ²	C 34898 35292 35805 36727 36759 37714 D 35098 35495 36015 36948 36980 37947 E 35351 35751 36278 37227 37261 38235 b 35397 35800 36326 37279 37313 38291 F 35563 35969 36502 37462 37497 38484
c 0 5 10 15 20	D .93998 .93495 .30015 .30948 .36980 .37947 E .35351 .35751 .36278 .37227 .37261 .38235 b .35397 .35800 .36326 .37279 .37313 .38291 F .35563 .35969 .36502 .37462 .37497 .38484 G .35776 .36191 .36733 .37705 .37733 .38742 G .35952 .36368 .36916 .37898 .37982 .38950 H .36028 .36443 .36997 .37978 .38013 .39036 H .36149 .36566 .37122 .38110 .38147 .39182 H .36291 .36715 .37273 .38266 .38300 .39347
0 80.7	F .35563 .35969 .36502 .37462 .37497 .38484 G .35776 .36191 .36733 .37705 .37733 .38742 G .35952 .36368 .36916 .37898 .37932 .38950
4 77.5 66.7 65.1 4.5 - 68.2	H .36028 .36443 .36997 .37978 .38013 .39036 H .36149 .36566 .37122 .38110 .38147 .39182 H .36291 .36715 .37273 .38266 .38300 .39347
8 75.4 - 66.0(7.5°)	n .50291 .50715 .57275 .58266 .38300 .39347
35 - 60.7 60.9 63.5 62.7	
45 64.2(40°)58.5 59.0 62.6 62.1 55 60.3 56.5 57.1 62.0 61.2	Borner, 1869
	t $n_{H\alpha}$ t $n_{H\beta}$ t $n_{H\gamma}$
	10%
Grabowsky, 1904	41 1 1 345801 30 3 1 352606 41 3 1 355926
% o	31.3
10° 30°	26.5 .347720 26.4 .354392 26.1 .357958 21.95 .348419 22.2 .354892 22.1 .358528
0 74.00 71.02 9.11 76.19 73.16	20%
9.11 76.19 73.16 18.47 78.90 76.17 24.71 81.01 78.01	38.9 1.360236 38.2 1.367493 37.1 1.371613
70,01	33.1 .361090 33.8 .368166 24.9 .371825 28.7 .361694 28.1 .368838 28.5 .372707 25.55 .362067 25.3 .369192 25.1 .373060
	21.8 .362458 21.8 .369599 21.7 .373553
	30%
Forch, 1905	39.5 1.372319 40.1 1.379801 41.1 1.383891 34.6 .372919 35.5 .380451 36.7 .384483 30.7 .373483 30.9 .381012 30.7 .385218 26.5 .374012 26.5 .381609 26.5 .385795
M t o M t	34.6 .372919 35.5 .380451 36.7 .38483 30.7 .373483 30.9 .381012 30.7 .385218 26.5 .374012 26.5 .381609 26.5 .385795
0 15.0 73.26 3.140 16.3 81.13 0.584 16.0 77.37 3.925 16.8 82.31 1.621 15.9 78.95 4.864 16.3 85.78	
0.584 16.0 77.37 3.925 16.8 82.31 1.621 15.9 78.95 4.864 16.3 85.78 2.432 15.9 80.13	
	Jones, 1904; Jones and Getman, 1904
	M n _D
De Block, 1925	0°
8 o 8 o	0 1.33395 0.2 32750
11.5°	0.5 .33045 1.0 .33559
0 73.78 11.8 77.35	2.0 3.0 3.5508
0 73.78 11.8 77.35 2.65 74.71 18.9 79.39 5.27 75.47 24.2 81.48	

Cheneveau, 1907	Andersen and Asmussen, 1932
% n _D % n _D	β (α) mol magn,
19° 0 1,3331 14.94 1,3611 5,13 .3427 19.68 .3701 10,10 .3521 24.25 .3792 12,54 .3566	12.54 6.31 19.54 6.51
% n C D T1 F G'	Guillaume, 1946 *(α)578οΑ magn.106
20,31 1,37049 1,37276 1,37472 1,37788 1,38200	20°
Geffcken, 1929	0.9 4.282 19.9 4.830 * in radians, gauss, centim.
m n _{He} m n _{He}	
0 1.332590 4.5897 1.370008 1.1619 .343862 6.484 .381425 2.2680 .353248	Andersen and Asmussen, 1932
1.1619 .343862 6.484 .381425 2.2680 .353248	% Verdet's constant (5460 A)
Shibata and Hölemann, 1931	12.54 0.0183 19.54 0.0200
m n _{He} m n _{He} m n _{He}	
25.0° 35.0° 45.0° 0 1.33270 0 1.33149 0 1.33000 1.8774 .35015 1.5881 .34646 1.8916 .34752 3.6504 .36379 1.9538 .34952 2.5178 .35258 4.6914 .37082 2.7594 .35589 4.1464 .36440 6.7500 .38308 4.7845 .37005 6.7529 .38021 6.7495 .38168 Spacu and Popper, 1934 **The **	0kazaki, 1933 *** Verdet's constant (3441 Å) 28° 3.96
20°	
0 1.3324865 16.362 1.363615 10.685 .352886 21.358 .373041 16.043 .363022 26.467 .382827	Mc Clung and Mc Intosh, 1902 d X-ray absorption (in %)
	room temp.
Guillaume, 1946	1.000 56.7 1.004 57.2
% ^п 5780 Å	1.017 60.8 1.033 68.3
6.9 1.3472 19.9 1.3713	1.062 76.4

Kohlrausch and Grotrian, 1875	Heat constants.
% ¹⁸ 0° 18°	Schuller, 1869
والمواقد المن المواقع	% U
5 608 913 10 1210 1765 15 1809 2571 20 2393 3345 25 - 4002	9.09 0.9100 16.67 .8403 23.08 .7946 27.01 .7644
Kohlrausch, 1879	Thomsen, 1871
% т.10 ⁴	mol% U mol% U
18° 5 913 199	180
\$ 913 199 10 1766 187 15 2570 172 20 3345 162 25 4000 155	0.5 0.982 3.9 0.881 0.9 .966 9.0 .778 1.7 .937 11.7 .760
Bender, 1887	Winkelmann, 1873
М ж	% U
18° 0.5 478	ورس خواهر بين هي هي هي هي هي هي هي هي هي هي هي هي هي
0.5 478 1 928 1.5 1346 2 1764	3.03 0.9645 5.71 .9341 9.98 .8997 14.99 .8574 25.00 .8003
Dennhardt, 1899	
M λ	Marignac, 1876
0° 10° 18°	% U
0.5 65.2 85.8 99.4 1 61.8 77.8 93.4 2 60.2 74.0 89.0 3 59.5 72.7 86.1 4 59.0 71.8 84.5	20-52° 2.90 0.9670 5.60 .9382 10.61 .8850 19.21 .8134
Johnston, 1907	F 1011
N λ N λ	Faasch, 1911
100° 10 163.9 0.10 307.7 4 188.2 .05 326.5 3 202.7 .025 341.7 2 222.0 .012 350.0 1 235.6 .005 365.6 0.5 259.3 .001 382.0 0.25 286.0 .0005 380.0	18° 0.465 0.971 0.971 .946 1.962 .900 3.950 .805

	iko and Pono			Mondain-Monval, 1925	0 diss				
m —————	U 25°	m 	U	0.85	t Q diss. 0.87 mol % 0 ~4060				
0.3061 .5035 .9981 1.9988	0.9814 .9672 .9413 .8955	3.0005 4.7890 7.0323	0.8574 .8021 .7534	18 27.7 mol %	-3840 -3680 t	0 dil.			
0.2049	50° 0.9859	3.5869	0.8428	initial final		Q dil.			
.3079 .9751 2.0126	.9800 .9458 .8980	5.0476 7.0116 7.0173	.8009 .7575 .7182	9.1 0.34 10.8 0.45 0 by addition to a	0.5 18	-414 -155			
0.1921 0.4920	75° 0.9896 .9764	4.3083 6.0441	0.8238 .7818	saturated solution					
1.0033 2.2545 3.0315	.9500	8,3118 11,4398	.7369 .6934	addition of	0°	Q 18°			
				one mole water.	-28	- 15			
	ann, 1873	رسيد وليس والمناس الأنفاذ المنافعة المناف المناف المناف		an amount of water necessary to dissolve one mole salt.	_278 e	_123			
%	50°	Q diss.	رسياهم الربيب عليا الدراس سيامر أند عب عد عب الدائر	t	Q diss. (limit)			
3.0 5.7 10 15 25		-55.4 -56.0 -56.3 -56.5 -57.6		0 19 27.6	- 3300 - 3480 - 3640				
Lehtonen M	Q diss. cal/g	M	Q diss. cal/g						
0.0625 .1250 .2500 .5000	-86.884 -86.604 -86.409 -85.986	1.0000 2.0000 4.0000	0 -82.913	===					

Water + Ammonium bromide ($\mathrm{NH_kBr}$)	Eder, 1880
Heterogeneous equilibria	g f.t.
Tammann, 1885	41.84 16 44.84 30 48.54 50
t p 0% 14.52% 28.87% 55.60% 60.82%	56.18 100
42.42 62.9 60.3 56.9 51.3 50.1 49.73 91.3 87.1 82.2 74.6 72.8 55.66 121.9 116.1 110.2 99.4 96.7	Smith and Eastlack, 1916
63.41 166.9 159.3 151.2 136.6 133.5 68.83 222.2 212.7 201.3 183.4 178.1	\$ f.t. % f.t.
42.42 62.9 60.3 56.9 51.3 50.1 49.73 91.3 87.1 82.2 74.6 72.8 55.66 121.9 116.1 110.2 99.4 96.7 62.41 166.9 159.3 151.2 136.6 133.5 68.83 222.2 212.7 201.3 183.4 178.1 80.48 362.4 345.7 328.0 296.4 290.3 86.72 463.9 442.6 420.0 378.6 373.8 91.18 550.0 525.7 498.4 449.7 439.5 100.65 777.8 741.0 702.9 635.1 622.0	37,34 0 64.61 132.0 39:13 5 64.69 132.3 40.48 10 65.15 135.0 41.76 15 65.41 136.7 43.02 20 65.59 137.6
* p * p	43.02 20 95.39 107.0 44.22 25 65.60 137.9 45.41 30 65.71 138.2
100° 5.61 745.7 28.40 659.6 9.62 734.1 33.80 633.4 16.41 713.8 40.62 589.3 18.73 701.4 51.27 517.3 21.76 689.5 53.87 496.1	46.55 35 65.71 139.1 47.64 40 65.85 140.14 48.77 45 65.97 141.5 49.80 50 66.24 143.7 51.87 60 66.54 146.2
Johnston, 1906 8 b.t. % b.t.	63.00 124.1
	E: 32,1% -17° tr.t. 137,3°
44.57 107.66 59.22 114.78 50.72 110.36 64.05 115.66 56.65 111.76	Scheffer, 1916
	% f.t. % f.t.
Johnston, 1907	62.88 121.8 66.28 144.75
% b.t. % b.t.	62.88 121.8 66.28 144.75 63.89 128.0 66.60 147.65 64.41 131.1 66.87 149.70 64.97 134.6 67.19 152.60 65.46 137.65 67.81 157.95
2.735 100.275 20.59 102.436 5.427 100.542 24.22 102.968	
8.11 100.814 27.28 103.511 10.45 101.076 31.8 104.431	tr.t. = 137.4°
12.67 101.345 34.8 105.003 14.67 101.596 39.8 106.224	
16.76 101.861 41.8 106.654	Benrath, Gjedebo and al., 1937
	% f.t. % f.t.
Jablezynski and Kon, 1923	60.6 116 77.7 259 63.8 137 79.1 285 64.5 138 81.0 302
m b.t. m b.t.	65.6 149 82.1 312
0,4471 100,414 1,3857 101,308 .6768 100,632 ,6406 101,556 .9175 100,854 ,9874 101,899 1,1568 101,085	66.9 160 83.4 335 70.0 180 85.1 360 70.1 184 86.8 391 72.1 203 97.1 400 73.2 214 98.5 426 75.6 239 90.4 462

Properties of phases .	
Troper tree or prince or	Heydweiller, 1909
Eder, 1880	M d M d
% d % d	18°
15° 0 0.9991 20 1.1285 5 1.0326 30 .1921 10 .0652 41.09 .2920 15 .0960	0.05 1.00142 1.0 1.0528 .10 .00419 2.0 .1063 .20 .00959 4.0 .2115 .50 .02605
33.3% Dt = -16.2	
	Gropp, 1915
Trank - 1995	t
Traube, 1885 d	3.989 N 0 1.2168
% c d	18 2098
0 0.9991 9.49 10 1.0542	48 . 1989 78 . 1807 100 . 1673
18.10 20 1.1052	
Perkin, 1889	Manchot, Jahrstorfer and Zepter, 1924
% d	c d c d
4° 15° 2 5°	25°
0 1.0000 0.9991 0.9971 25 7 1.1576 1.1540 40.423 1.2867 1.2805 1.2766	10.225 1.0535 20.931 1.1100 10.465 1.0540 40.803 1.2122 20.745 1.1088 41.862 1.2215
	Andersen and Asmussen, 1932
Schiff and Monsacchi, 1896	% d
% d % d	0°
20° 0 0.9982 25.00 1.1556	20.05 1.1244 26.79 1.1749
10.81 1.0608 40.42 1.2783 15.31 1.0886 100 2.3956	
21.28 1.1278	Getman, 1908
	M η M η
Getman, 1908	25°
M d M d	0 894.9 1.323 857.5 0.216 886.7 1.588 848.0
0 0.9971 1.323 1.0715 0.216 1.0121 1.588 .0858 0.432 .0247 2.646 .1414 0.647 .0352 3.486 .1758 0.863 .0468 4.357 .2273 1.079 .0583 4.920 .2605	0.216 886.7 1.588 848.0 .432 879.6 2.646 825.4 .647 875.6 3.486 835.6 .863 868.0 4.357 847.0 1.079 864.4 4.920 856.0

Traube, 1885	Heydweiller, 1909
% <u>c</u> o	M λ M λ
15°	18°
0 0 73.26 9.49 10 73.67 18.10 20 75.00	0.05 117.9 1.0 101.8 .10 114.4 2.0 97.7 .20 110.1 4.0 90.1 .50 104.9
Perkin, 1889	Gropp, 1915
% t (α) _{magn} .	t *
25 19.2 1.4106 40.423 20.0 1.7283	3.989 N 0 2614 18 3605 48 5300 78 7005 100 8064
Andersen and Asmussen, 1932	
g (α)mol magn. (5460 Å)	Andersen and Asmussen, 1932
0°	% Verdet's constant
20.05 26.79 10.27	0° 5460 Å 20.05 0.0206 26.79 0.0226
Dennhardt, 1899	
M λ 0° 10° 18°	Faasch, 1911 mol/L water U
و بنيه الله الله الله الله الله الله الله ال	mol/L water U
1 73.7 91.2 107.0 2 68.2 83.5 97.5 3 66.3 80.0 93.7 4 65.2 77.7 89.2 5 63.5 75.4 84.6	0.494 0.951 0.985 .905 1.983 .820 4.017 .688
Johnston, 1907	
N \(\lambda\) N \(\lambda\)	
100°	
0.001 393.5 1.00 258.6 .025 369.7 2.00 239.2 .050 357.8 3.00 220.9 .100 336.2 3.79 188.2 .250 310.6 5.43 163.3	
·	·

	Kordes, 1926				
Water + Ammonium iodide ($\mathrm{NH}_{12}\mathrm{I}$)	E 13.4 mo1% -27°				
=					
Tammann, 1885					
8 p % p	Kohlrausch, 1879				
100°	% d				
10.42 739.9 42.82 624.0 20.56 715.6 47.35 598.8 30.60 681.3 60.52 503.8	18°				
30,60 681.3 60,52 503.8 36,53 656,0 66,56 449,6	10 1.0652 20 .1397				
38.81 645.1	20 .1397 30 .2260 40 .3260				
	50 .4415				
Johnston, 1907					
% b.t. % b.t.					
3.72 100.290 38.2 104.374	Rontgen and Schneider, 1886				
10.58 100.790 40.9 104.950 15.90 101.250 42.3 105.361	% d				
1 20 10 101.760 51.1 107.664 H	18°				
29.1 102.846 56.6 109.568 32.5 103.392 57.8 110.154	9.14 1.0620 17.77 1.1285				
35.4 103.870					
John world and War 1000					
Jablezynski and Kon, 1923	Perkin, 1889				
m b.t. m b.t.	% d 4° 15° 25°				
0.4652 100,439 1.0552 101,004 .6280 100,589 .2248 101,168 .8990 100,847 .5280 101,474	ہیں ہے جو میں بن کیا گیا۔ کہ بن کے بہریک ایک ایک ایک ایک ایک اور ایک ایک ایک ایک ایک ایک ایک ایک ایک ایک				
.8990 100,847 .5280 101,474	0 0.9997 0.9991 0.9971 30.5 - 1.2340 1.2298 54.64 - 5109 5046				
	58.46 1.5723 .5687 .5619				
	60.44 1,6021 .5947 .9468				
Smith and Eastlack, 1916					
7 f.t. 7 f.t.	Schiff and Monsacchi, 1896				
57.76 -19 67.13 55.5	% d % d				
59.78 -6 67.77 61.3 61.57 +6.4 68.71 70.8	15°				
61.99 10.1 69.64 80.8 63.86 25.0 70.93 93.8 64.43 29.6 72.40 110.5	0 0.9991 30.50 1.2341				
64.72 32.2 74.49 135.0	3.355 1.0202 54.64 1.5109 6.71 1.0424 58.46 1.5688				
66.33 47.2 74.65 136.0 E: 55.6% -27.5°	10.92 1.0714 60.44 1.5948 18.58 1.1265 100 2.5168				

Le Blanc and Rohland, 1896	Rontgen and Schneider, 1886
% d	π (apparent)
20°	17.6°
0 0,9982 12.51 1,0827 19.19 1,1339	9.14 0.954 17.77 0.910
Ranken and Taylor, 1906	Ranken and Taylor, 1906
M d M d	M η M η
30° 45°	30° 45°
0 0.9957 0 0.9903 0.125 1.0071 0.125 1.0026 .25 .0181 .25 .0145 .50 .0401 .50 .0380 1 .0944 1 .0853 4 .3513 6 .5285	0 802 0 602.9 0.125 792 0.125 595.0 .25 786 .25 592.5 .5 753 .50 585.5 1 729 1. 578.0 4 823
Getman, 1908	Getman, 1908
M d M d	М п 10° 15° 20°
25° 30° 0.9971 0 0.9957 0.500 1.0447 0.125 1.0071 0.751 .0675 0.25 .0181 1.001 .0913 0.50 .0401 1.501 .1377 1.00 .0944 2.002 .1839 4.00 .3513 3.002 .2765 6.00 .5285	1.001 1146 1031 927.7 2.002 1044 956.8 875.2 3.002 994.7 929.7 864.8 4.003 1001 931 869.2 5.004 1051 976.1 901.7
3,002 .2765 6,00 .5285 4,003 .3692 5,004 .4591	M n M n
M d 10° 15° 20° 1.001 1.0944 1.0937 1.0929 2.002 .1889 .1874 .1859 3.002 .2826 .2806 .2786 4.003 .3763 .3738 .3717 5.004 .4661 .4641 .4611	25° 30° 894.9 0 802 0 857.7 0.125 792 0.500 844.0 0.25 786 0.781 823.7 0.50 774 1.001 808.6 1.00 753 1.501 782.7 4.00 729 2.002 777.9 6.00 823 2.502 784.2 3.002 799.7 4.003 832.1 5.004
Heydweiller, 1909	Le Blanc and Rohland, 1896
M d M d	g n _D
180	20°
0.05 1.001312 1.0 1.08887 .10 .00868 2.0 .1786 .20 .01676 4.0 .3568 .50 .04412	0 1.333 12.51 1.3534 19.19 1.3657

						,					
Perkin,	1889					H ₂ 0 + An	an.onium ni	itrite (M	ί ₂ Η ₄ Ο ₂)		
% 	t 	(α)	magn.			Bureau,	1937				
30.5 54.64	21.5 20.0	1.7	79 27 7312			78	f.t.	E	%	f.t.	E
58,46 60,44	16.1 21.2	2.9	9356 9140 			10.2 17.95 21.3	-5.2 -10.5 -12.4	-27.80 -27.60 -27.85	50.05 56.0 64.3	-11.15 +1.4 19.15	-27.95
Kohlrauso	ch, 1879					35.0 42.5	-21.75 -27.95	-27.90 -27.85	75.0 87.8	33.45	-27.90 p27.95
	%	ж		τ.104							
	10	18° 777		202		H ₂ O + A	mmonium n	itrate (N ₂ H ₄ O ₃)		
	20 30 40 50	1588 2465 3366 4164		193 180 167 154		Heterog	eneous eq	uilibria	•		
		7207				Vapour	pressure	and boili	ng point		
Johnston,	. 1907								3 1	. *	:
N	, ->0-		N N	и		Tammann	, 1885				
0.001	3.5	100°	1 00	2446		%	p	 %		p	
0.001 0.010 0.031 0.062 0.125 0.250 0.50	3.7 36.4 107.7 206.6 402.8 756 1368	,8 ;	1.00 2.00 3.51 3.69 4.41	2446 4442 5467 5409 5767 5983		4.78 5.72 9.99 17.47 24.46	745.4 743.4 728.4 704.6 676.5	46.9 48.4 54.2 59.4	8 56 1 55 4 52 9 48	01.8 64.4 66.7 84.1	
Heydweil1	ler, 1909					28.28 34.75	657.4 627.9	63.9 65.8	1 45 5 43	50.8 35.7	
м	λ		М	λ	I						
0.05	118.	18°	1.0	103	_	Pridea	ux and Ca	ven, 1919			
0.1 0.2	115. 111.	0	2.0	100	0	t	p	t	р	t	р
0.5	106.				===	42.2 51.4 60.8	52 78 123	47. 71.2 79.6 82.2	8 % 194 276 295	90.8 98.2	410 532
Davis and	Jones, 19	12 - 191	.3					50.			
м	25°	λ 35°	45°	ه حدد اسم شین شین شین جدی حدید حدید		40 48.2 61.2	42 62 108	66 71.2 80.4	134 176 258.5	86 90.2 94.1	309.2 383.5 424
0.77 .50 .25 .10 .02 .01 .005 .0025 .0012	100.7 102.5 105.3 121.3 135.2 136.3 139.0 143.1 151.1	114.1 125.3 125.8 148.6 160.5 161.3 168.5 171.2 182.0 184.6	130.4 147.1 151.1 172.1 186.1 190.1 202.2 215.2	5 3 6 3 8 7 7		40.1 41.0 43.0 49.8 54.5 56.2 61.3	29.8 32.0 37.3 43.9 51.2 53.8 67.0	sat. 58.0 70.4 70.6 74.7 80.9 81.2	84.0 93.0 94.8 110.0 121.7 124.4	87.6 89.8 90.0 92.0 98.0 103.4	137 8 143 7 145 5 152 0 166 4 177 4

WATER + AMMONIUM NITRATE

				·			
Edgar and Swan, 1922	ني حصر الحدر الله حليه النبية النبية عنياء الله الله النبية النبية النبية النبية الله الله النبية النبية النبية		e and Rah	lfs, 1930			
t p %	p	t	p	t	p t	: 	p
sat.sol.		49.99		75.8%		89.1	f !
19 12.34 25 20 13.06 26 21 14.02 27 22 14.87 28 23 15.76 29 24 16.70 30	17.68 18.72 19.81 20.96 22.17 23.46	103 101 94.5 93.0 80.5 65.5	587 466 444 271 149	113 5 101.5 3 80.5 1	41 89 60 80 79 61 81 42 28) ! }	36 12 65 30 20
	رسيد القدر خالي معين الجن الجنو بلدن شدن مدي الحدد المديد الجنو الجنو بليد توسيد الحدد ماليد شدن شار و تقدر القدر خالف الجنو الجنو الجنور وجهر مديد المديد الجنور لجنو الجنوب بليد بجنوب لجنوب الفروطين المديد المد	89.79		96.5%		99.4	6
Mondain-Monval, 1923 and 1925		143.5 135 124.5 118 76	716 563 417 340 100	100 1	95 165 78 160 22 150 140 124).5)	55 100 167 186 198
	p .9 % 70.6 %	======	ه النان الذي الذي الذي الذي الذي الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدي إلى الذين الذين الذين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الدين الد	نوی میدواندن است است است است است است است است است است	102		172 =======
40.0 36.90 34	. 83 20 81 . 36 31 26 . 84 39 77 . 64 46 70	Gibso	n and Adam				
		8	p	%	p		من من من من من من من من من
				0.28°			
Adams and Merz, 1929		15.97 22.28 29.48	218.0 212.6 205.0	50.07 56.10 60.47 60.52	179.1 169.1 160.7		
t p	<u>t</u> <u>p</u>	46,01	186.0	60.52	161.9		
10 6.88 3 15 8.9 5 4	18.93 10 29.11 10 44.71	Dinge	mans, 1940				
		t	p	t	p	t	p
Fricke, 1929		10.00 12.00 15.00	6.4 7.2 8.5 9.5	sat. 65.00 67.00	74.3 78.9	117.0 120.0	190.6 189.4
mol %	p 10°	15.00 17.00 20.00 22.00	11.2	70.00 72.00 75.00 77.00	86.2 91.3 99.1 104.2	122.0 124.0 125.0 127.0	187.7 185.2 183.6 184.7
6.25 4.313 13.79 3.864 17.46 3.694 24.28 3.388	8.561 7.296 7.296 6.649	25.00 27.00 30.00 32.00 35.00 37.00	14.4 15.9 18.5 20.4 23.4 25.6	80.00 82.00 85.00 87.00 90.0 92.0 95.0	112.2 117.4 125.5 131.2 139.8 145.4	130.0 132.0 135.0 137.0 140.0 142.0	186.2 186.5 185.5 183.8 180.2
		40.00 42.00 45.00 47.00 50.00 52.00 55.00 60.00 62.00	36.2 39.2 44.1 47.6 53.1 57.0 63.2	95.0 97.0 100.0 102.0 105.0 107.0 110.0 112.0 115.0	153.6 159.0	145.0 147.0 150.0 152.0 155.0 157.0 160.0 162.0	176 169 163 151 142 127 116 96 82 50
			میں شاہد جان امیں شہر اسے امیر امیر امیر امیر امیر امیر امیر امیر		د نمور شور کورد خدر داون سول کنید داون سول کنید به نورد کورد کمیر شور سول کنید کمیر کمیر کارد داون کارد کمیر کارد کارد کمیر کارد کارد کمیر کارد کارد کارد کارد	ئىر دىي شىيە ئايد قىي قىي قىي ئايدىنى ئايدىلى، ئاند قاي ئايد	و حدید این حدید خده قدید آنجد آنجد به حدید حدید بدن بدنده آنجد آنجد آنجد

	, Fish	man and al.	, 1956 t	·-·		Gerlach %	, 1886 b.t.	8	b.t.	%	b.t.
t		p			p	*			D. C.		
30.00 40.00 50.00 60.00 70.00		10.00 31.51 54.48 90.70 145.90 227.17	80.00 90.00 100.00 101.40	50 73	4.10 08.2 03.2 70.5	0 9.09 16.67 23.08 29.08 34.21 38.65	100 101 102 103 104 105	78.07 78.99 79.84 80.66 81.45 82.18	126 127 128 129 130 131	91.25 91.51 91.78 92.03 92.28 92.52	152 153 154 155 156 157
30.00 40.00 50.00 60.00 70.00		20.00 30.90 53.84 88.94 141.8 219.3 30.00	80.00 90.00 100.00 102.00	48 69	30.5 36.5 99.8 50.6	42.53 45.95 48.98 51.92	106 107 108 109 110	82.87 83.53 84.13 84.71 85.25 85.82 86.33	132 133 134 135 136 137	92.75 92.94 93.19 93.40 93.60 93.79	158 159 160 161 162 163
30.00 40.00 50.00 60.00 70.00		30.43 52.00 84.78 134.7 208.2	80.00 90.00 100.00 104.00	45 65	3.0 59.6 59.9 58.4	56.88 59.18 61.24 63.24 65.13 66.89 68.45	112 113 114 115 116 117	86.75 87.04 87.78 88.05 88.44	138 139 140 141 142 143	93.96 94.13 94.29 94.45 94.58 94.72	164 165 166 167 168 169
30.00 40.00 50.00 60.00 70.00		26.25 45.30 75.09 120.8 188.0	80.00 90.00 100.00 105.71	42 60	34.6 20.0 04.3 36.9	68.45 69.88 71.27 72.60 73.89 75.06 76.13	118 119 120 121 122 123 124	88,85 89,16 89,50 89,83 90,13 90,43 90,71	144 145 146 147 148 149	94.84 96.00 96.90 97.58 98.25 98.83	170 180 190 200 210 220
30.00 40.00 50.00 60.00		25.65 43.39 71.68 113.4 60.00	70.00 80.00 87.91 100.00	26 35	76.0 65.7 68.9 55.7	77.12	125	90.96	150 151	99.41 100.00	230 240
30.00 40.00 50.00 60.00		21.72 36.96 61.54 98.36 70.00	70.00 80.00 90.00 100.00	33 48	52.8 31.0 39.5 36.7	Hoeg,	1930	b.t.	%	b	
40.00 50.00 60.00 70.00		31.62 52.10 82.20 128.6 80.00	80.00 90.00 100.00	28 40	93.8 95.6 95.5	35. 51	.1 .9	105 110 115	84.0 90.75 93.4	14 5 15	0 0 0
60.00 70.00 80.00		63.82 98.13 146.4 90.00	90.00 100.00	21 30	3.5 4.8	63 71 77 81	.15 .4	120 125 130	95.9 97.55	5 18 20	
$100.00 \\ 105.00 \\ 110.00 \\ 115.00$		210.2 240.2 281.9 330.0	120.00 125.00 130.00	44	5.7 5.7 2.0	Campbel	1 and Ka	ırızmark, l	950		
							wt %	m	101 %	b t	
Legrand,	1835 b.t.	%	b.t.	 %	b.t.		10.51 20.09 22.95 28.72		2.6 5.3 6.3 8.3	102.0 103.0 103.9 104.9	
9.09 17.01 23.84 29.78 34.98 39.47	101 102 103 104 105 106	65.28 67.14 68.89 70.48 71.97 73.35 75.84	115 116 117 118 119 120	87.58 88.51 89.37 90.15 90.87 91.54	138 140 142 144 146 148		43.10 50.66 61.87 68.78 80.32 87.40	1 2 3 4	4.5 8.8 6.7 3.1 7.8 60.9	108.5 111.0 116.5 120.9 129.6 145.7	
43.60 47.20 50.46 53.47 56.22 58.73 61.06 63.24	107 108 109 110 111 112 113 114	75.84 77.98 79.84 81.48 82.97 84.31 85.51 86.58	122 124 126 128 130 132 134 136	92.15 92.72 93.26 93.77 94.24 94.67 95.05 95.42	150 152 154 156 158 160 162 164						
							7				

Freezing curve .	
	Schwarz, 1892
P. 40 1061	% f.t. % f.t.
Rüdorff, 1861	54.16 0 79.22 55 57.09 5 80.78 60 60.53 10 82.16 65 63.52 15 83.27 70 65.16 20 84.54 75 65.16 20 84.54 80
0.99 -0.4 7.41 -3.0 1.96 -0.8 9.09 -3.65 3.85 -1.55 10.71 -4.55 5.66 -2.3	70.27 30 85.55 83 72.40 35 87.07 85 71.34 36 88.12 90
Mulder, 1866	73.06 40 89.10 95 75.31 45 89.70 100 77.53 50
% f.t. % f.t.	
48.72-49.49 0 72.49 37. 7 5 61.39 15 79.47 55.3 62.96 16 83.39 68.0 70.30 31 90.39 99.7	Müller, 1899
62.96 16 83.39 68.0 70.30 31 90.39 99.7	% f.t.
	67,74 28 72,67 31.9 32.2 tr.t.
de Coppet, 1872	
\$ f.t. % f.t.	
1.96 -0.83 23.08 -9.35 4.76 -2.03 28.57 -11.75 5.66 -2.40 33.33 -13.60 9.09 -3.85 37.50 -15.60 10.71 -4.55 41.26 -17.40	Muller and Kaufmann, 1903 mol% f.t. mol% f.t.
9.09 -3.85 37.50 -15.60 10.71 -4.55 41.26 -17.40 16.67 -6.90	25.65 12.2 37.07 34.0 30.21 20.2 37.42 35.0 31.77 23.0 37.50 35.1 32.48 25.05 37.73 35.6 34.07 27.7 37.89 36.0 34.15 28.0 38.61 37.5 35.23 30.0 38.87 38.0 35.31 30.2 39.06 38.5 36.30 31 30.2 39.06
Rüdorff, 1872	36.55 32.1 39.68 39.5
% f.t. % f.t.	36,67 32,7 40,05 40.0
3.85 -1.55 10.71 -4.40 5.66 -2.30 12.28 -4.90 7.41 -3.00 13.79 -5.55 9.09 -3.75 16.67 -6.70	Jones, 1904 and Jones and German, 1904
	M f.t. M fi
Guthrie, 1876	0.5 -1.686 2.0 -5.996 1.0 -3.145 3.0 -8.720
% f.t. % f.t.	
10 -3.5 43.7 -17.2 E 20 -7.0 47 -12.0 30 -11.5 51 -5.7	Johnston, 1906
40 -17.0 54.1 0.0 66.5 +18.1	% f.i. % f.i.
	3.64 -1.54 28.00 -11.254 7.50 -3.168 39.14 -14.80 14.95 -6.565

de Waal, 1910	Kazantsev, 1923
掲 f.t.	% f.t. % f.t.
54.19 0 70.10 30 84.03 70 Fedotiev and Koltunov, 1914	I II 54.3 0 73.3 40 60.0 10 74.3 42.5 62.4 15 75.0 45 65.0 20 76.7 50 67.6 25 80.0 60 70.2 30 84.1 75 70.6 32.5 85.7 80 71.8 35 88.3 90 72.3 37.5 90.1 98.5
# f.t.	tr.t. = 37 - 38°
54.21 0 62.60 15 69.94 30	Mondain-Monval, 1923
	% f.t. % f.t.
Rodebush, 1918	68.25 26.7 70.96 32.9 69.11 28.6 71.29 33.8 69.44 29.4 71.78 35.3 69.95 30.4 72.14 36.0 70.10 30.8 73.30 39.2 70.70 32.2
33.31 -12.70 38.30 -14.72 41.55 -16.17 42.79 -16.67 E	Cohen and Breda, 1925 ### ### ############################
	III IV
Millican, Joseph and Lowry, 1922 # f.t. # f.t. 59.70 6.2 87.84 85.6 64.64 16.9 88.99 90.4 68.03 24.5 89.70 93.7 71.05 31.9 89.96 95 71.84 34.3 91.10 100.1	71.12 33.00 0 54.23 72.21 36.00 5 57.23 73.27 39.00 10 60.05
73.80 38.1 91.09 100.9 75.71 43.7 91.24 99 78.04 51.5 93.76 112 78.85 55.3 95.23 120.8	Kordes, 1926 mol≸ f.t.
80.24 58.4 95.01 122 83.77 71.0 96.80 133 83.96 71.4 97.14 135.8 84.43 72.4 97.99 146 86.56 81.4 98.95 157 86.84 81.7 100 169 87.11 83.8	13.6 -17 100.0 +169
tr.t.: 32.84° and 125°	Ноед, 1930
	\$ f.t. \$ f.t.
	66.1 20 91.0 100 73.7 40 97.7 120 80.2 60 97.4 140 85.9 80

Kurnakov and Ravich, 1933	Wishaw and Stokes, 1953
% f.t.	m osmotic m osmotic
42.30 -16.90 ice + rhombic I 47.24 -10 rhombic II 54.94 0 " 68.19 +25 " 72.21 35 rhomboedric 79.40 55 "	coefficient coefficient 25° 0.1 0.911 7.0 0.653 .2 .890 8.0 .639 .3 .874 9.0 .627 .4 .864 10.0 .616 .5 .855 11.0 .607
85.68 80 " 86.89 86 cubic 89.41 100 " 95.64 130 tetragonal tr.t.: rhombic I-II -16° rhombic-rhomboedric +32.3° rhomboedric - cubic 85°	0.1
cubic - tetragonal 125°	.4 .803 10.0 .550 .6 .793 19.0 .550 .8 .785 20.0 .544 2.0 .776 21.0 .539 2.5 .758 22.0 .534 3.0 .743 23.0 .528 3.5 .728 24.0 .524 4.0 .715 25.0 .519 4.5 .702 26.0 .514
% f.t. % f.t.	4.5 .702 26.0 .514 5.0 .690 27.0 .509 6.0 .670 25.954 .514
54.23 0 I 74.25 40 60.00 10 78.00 50 62.40 15 80.58 60	m ₁ m ₂ m ₁ m ₂
54,23 0 I 74,25 40 60,00 10 78,00 50 62,40 15 80,58 60 65,05 20 83,70 70 68,20 25 83,63 80 70,36 30 88,91 90 72,00 32.5 II 90,30 100	25° 0.1106 0.1135 3.361 5.234 2322 .2426 .561 5.717 4352 .4670 .853 6.432 .6170 .6772 4.127 7.120 .7881 .8833 .320 7.639 1.001 1.148 .517 8.185 1.157 .352 .713 8.751 2.276 .514 .836 9.112 .464 .779 .994 9.590 .556 .917 5.123 9.985 .712 2.149 .322 10.605 .867 .396 .405 10.875 .910 .458 .566 11.407 .2.137 .833 .629 11,615
Bergman and Bochkarev, 1938	.6170 .6772 4.127 7.120 .7881 .8833 .320 7.639 1.001 1.148 .517 8.185 .157 .352 .713 8.751 .276 .514 .836 9.112 .464 .779 .994 9.590 .556 .917 5.123 9.985 .712 2.149 .322 10.605 .867 .396 .405 10.875
% f.t. % f.t. 10 -3.7 50 -5.1 20 -7.4 55 2.2 30 -10.8 60 10.6 40 -15.2 70 31.5 46 -11.8	712 2.149 .322 10.605 .867 .396 .405 10.875 .910 .458 .566 11.407 2.137 .833 .629 11.615 .322 .991 .814 12.243 .354 3.212 .917 12.595 .544 .554 6.061 13.106 .881 4.223 .127 13.337 3.090 .640
E: 43.0% -16.6°	m ₁ - NaCl m ₂ - Ammonium nitrate
	m ₃ m ₂ m ₃ m ₂
Thompson and Vener, 1948 # f.t. 69.86 30 73.58 40 76.99 50 80.14 60 83.20 70	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Properties of phases . Density .	Kohlrausch, 1879
	% d % d
Gerlach, 1866 and 1869	5 1.0201 30 1.1304
% d % d	10 .0419 40 .1780 20 .0860 50 .2279
17.5°	
	Kanonnikov, 1885
1 1.0029 34 .1487 2 .0072 35 .1535 3 .0114 36 .1583 4 .0157 37 .1631 5 .0199 38 .1679 6 .0242 39 .1727 7 .0284 40 .1775 8 .0327 41 .1826 9 .0369 42 .1877	8 t d 0 20 0.9983 16.61 21.6 1.0680
10 .0412 43 .1927 11 .0455 44 .1979 12 .0498 45 .2029 13 .0541 46 .2080 14 .0585 47 .2131 15 .0628 48 .2182	Rontgers and Schneider, 1886
16 .0672 49 .2233 17 .0715 50 .2284	8 0 % 0
18 .0759 51 .2337 19 .0802 52 .2391 20 .0846 53 .2446 21 .0891 54 .2498 22 .0936 55 .2551	18° 5.26 1.0211 10.87 1.0452 6.23 1.0255 12.60 1.0529
23 .0981 56 .2606 24 .1026 57 .2659 25 .1071 58 .2712 26 .1116 59 .2764 27 .1161 60 .2818	Humburg, 1893
28 .1206 61 .2871 29 .1250 62 .2925 30 .1295 63 .2988 31 .1343 64 .3042 32 .1391 sat.sol3030	16° 0 0.9990 14.06 1.0629 23.48 1.1024
Thomsen, 1870	Schiff and Monsacchi, 1896 and 1897
18°	% d % d
0 0,9986 4,26 1,0180 8,16 .0331 18,18 .0743	0 0.9976 21 1.0860 4 1.0133 28 .1175 7 .0260 42 .18276 14 .0559 63 .2955 21 .0860 100 .6973
Thomsen, 1871	
mo1% d	Sentis, 1897 mol% t d mol% t d
18°	
0 0.9986 1.0 1.0180 2.0 .0331 4.8 .0743 16.7 .2046	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

4
Getman, 1908
M d M d
0 0.9971 2.012 1.0602 0.256 1.0059 .245 .0676 .512 .0137 .587 .0777 .767 .0215 .909 .0873 1.023 .0300 3.636 .1078 .279 .0373 4.664 .1396 .454 .0432
Rower, 1910
25° 10.485
Fedotiev and Koltunov, 1914
54,21 0 1,264 62,60 15 1,298 69,94 30 1,329
Rabinowitsch, 1921
8 d 8 d
100° 0 0.900 40.9 1.129 1.00 .962 50.9 .175 2.08 .964 61.8 .237 5.27 .978 71.8 .293 10.50 .997 81.4 .355 20.70 1.039 86.8 .383 30.90 .082
Manchot, Jahrstorfer and Zepter, 1924 c d 25° 7.125 1.0249 14.809 .0527 29.058 .1040 59.236 .2116

Cohen, Helderman and Moesveld, 1924	Adams and Gibson, 1932 and 1934				
% d % d	% d % d				
32.3°	25°				
10.01 1.03490 49.01 1.21703 20.05 .07713 59.52 .26823 30.08 .12151 69.62 .32464 39.95 .16782	0 0,997076 35.0106 1,149033 0.9995 1,001140 44.7123 .196321 4,9970 .017294 54.9843 .249263 9,9138 .037518 59.9944 .276264 15.0141 .059017 64.9347 .303742 20,0140 .080628 65.1941 .305205 24,9921 .102745 67.7622 .319876 25.0045 .102791				
Cohen and Breda, 1925					
% d					
32.3° 50.0°	Lühdemann, 1935				
14.99 - 1.04685 25.00 1.09876 .08899	N m đ				
25.00 1.09876 .08899 34.99 .14447 .13370 44.98 .19290 .18162 54.98 .24418 .23271 64.98 .29865 .28683 70.65 .33111 - 74.9934502	25° 00 0 0 0.99707 1.1555 1.2289 1.03353 2.0506 2.2864 .06100 2.7274 3.1594 .08146 3.6544 4.5406 .11025 4.4434 5.7286 .13224 5.5277 8.4593 .17483 7.4564 12.0204 21815				
	7.4564 12.0204 .21815 7.4564 12.0209 .21819				
Hoeg, 1930					
% d (at f.t.) % d (at f.t.)					
35.1 1.100 66.1 1.3115	Guillaume, 1946				
51.9 .177 73.7 .3415 63.1 .234 80.2 .3519	% d				
71.3 .276 85.9 .3940 77.15 .306 91.0 .4145 81.4 .328 97.7 .4260 84.0 .358 97.4 .4360 90.75 .375 93.4 .390 95.9 .398 97.55 .401	24° 11.8 1.0495 21.2 .0904 28.6 .1236 39.4 .1747				
t d 20% 30% 40% 50% 60% 70%	Campbell, Kartzmark and al., 1950				
20 1.0830 1.1275 1.1750 1.2250 1.2785 - 40 .0725 .1160 .1630 .2130 .2660 1.3220	8 M d 8 M d				
40 .0725 .1160 .1630 .2130 .2660 1.3220 60 .0620 .1045 .1510 .2005 .2525 .3091	24.99° 25°				
60 .0620 .1045 .1510 .2005 .2525 .3091 80 .0515 .0935 .1390 .1875 .2395 .2960 100 .0410 .0820 .1270 .1745 .2265 .2825	0.80 0.100 1.001 0.80 0.181 1.0002				
	0.80 0.100 1.001 0.80 0.181 1.0002 7.81 1.004 .029 7.75 1.855 .028 15.06 1.993 .059 15.08 3.941 .059 21.91 2.982 .089 21.99 5.961 .089				
t d 80% 90% 94% 97%	21.91 2.982 .089 21.99 5.961 .089 28.74 4.020 .120 28.66 8.287 .119 34.93 5.014 .149 34.77 10.71 .147				
60 1.3685 80 .3555	46.54 7.015 .206 46.80 16.59 .205 51.98 8.011 .234 52.10 19.65 .233				
120	57.31 9.043 .262 56.63 22.70 .257 62.14 10.004 .289 62.32 27.11 .284 68.49 11.282 .319 68.49 32.83 .319				

Campbell and Kartzmark, 1952	De Heen, 1881
% d % d	t relative t relative volume volume
95°	9.06 %
0.728 0.9656 45.89 1.157 1.605 .9677 53.12 .198 8.041 .9918 57.50 .217 12.119 1.0071 64.65 .253 19.895 .0365 69.54 .281 26.960 .0690 79.74 .336 31.116 .0860 85.58 .385 38.130 .1180	10.00 1.000000 40.92 1.011006 13.70 .001014 50.83 .015728 21.20 .003292 59.20 .020090 29.54 .006291 69.70 .026121 24.93 %
38,130 .1180	10.00 1.000000 39.44 1.013131 15.10 .001986 49.50 .018271 19.60 .003854 59.10 .023659 28.25 .007705 74.45 .032760
Campbell and Kartzmark and al., 1953 **B d	35.63 % 10.00 1.000000 48.05 1.019166 18.70 .003984 56.79 .024146 27.52 .008311 69.91 .032016 34.84 .011990
0.0 0.99406 0.0 0.99707 0.4324 0.9958 0.0540 0.99883 7,9779 1.0269 1.0261 1.02957 12.963 .0461 .7009 .05028 14,533 .0523 .9184 .05670 18.352 .0688 2.4611 .0735	de Launoy,1895
28.572 .1136 38.071 1570	t relative volume 4% 12% 20% 44%
47.424 .2038 50,378 .2188 66.012 .3035 	0 1.00000 1.00000 1.00000 1.00000 10 .00060 .00242 .00331 .00465 20 .00282 .00549 .00718 .00948 30 .00617 .00920 .01134 .01447 40 .00995 .01338 .01600 .01960 50 .01409 .01805 .02098 .02498 60 .01882 .02312 .02633 .03058 70 .02420 .02870 .03218 .03636
% M d	80 .03015 .03475 .03825 .04240
180° 0.7984 0.0890 0.8919 8.5160 0.9868 0.9276 16.077 1.922 0.9571 24.028 2.982 0.9935 24.028 2.988 0.9955 32.141 4.136 1.030 38.692 5.133 1.062 38.692 5.128 1.061 45.215 6.207 1.099 50.190 7.029 1.121 54.907 7.854 1.145 58.590 8.534 1.166 61.995 9.170 1.184 66.71 10.15 1.218 66.85 10.13 1.213 71.20 10.95 1.231 71.20 10.95 1.231 76.42 12.14 1.272 78.84 12.70 1.290 83.78 13.84 1.322 85.15 14.11 1.326 88.50 14.98 1.355 100.00 18.00 1.440	Röntgers and Schneider, 1886 π (relative) 18° 5.26 0.954 6.23 .945 10.87 .906 12.60 .893
·	

						1						
1												
Viscosity and surface tension .		Wolkowa and Titow, 1931										
¥13€052	ly and san	lace com-	1011			- work	Owa and		g 	η		
						∥		η 15°		,1		
Getman	, 1908							_		1 200		
M	n	М	ή			1,28	41 l	486	1.1116	1082 1062		
		25°				.221	19 1.	366 230	.0677	1060 1061		
0	894.9	2.012	850.4			.185		230 1 2 0	.0231	1087		
0.256 .512	885.3 879.7	. 245 . 587	850.0 856.5									==
.767 1.023	872.4 865.6	.909 3.636	862.7 885.0									
.279	860.2	4.664	930.8									
.454	857.9					Campbe	ell and I	Kartzmark	, 1950			i
l						8	M	η (water=1	.) %	М	η (water	r=1)
								24.9	99°			
Rabinov	witsch, 19	21				0.80	0.100	0.991	41.01	6.036	1.144	
%	η (water		% n	(water=1)		7.81 15.06	1.004	.960 .952	46.54 51.98	$7.015 \\ 8.011$.234	
		100°				21.91	2.982	.977 1.009	57.31 62.14	9.043	.531	1
	1 000			1.54		34.93	$\frac{4.020}{5.014}$	1.061	68.49	11.282	2.170	
$\frac{0}{1.00}$	1.000	50),9 1	1.84		l====						
2.08 5,27	.013 .037	71	1.8 3	2.53 3.71								
5.27 10.50 20.70	.077	81	l.4 6	5.01 8.44		Campb	ell and	Kartzmark	1952			1
30.90	.319	-		1.47		8		ater=1)	<u>%</u>	η (wate	1 \	
						·	11 =	95°		1) (114 2 2	3L-1\	
						1.605	1.0	95° 016	53.12	1.7	77	J
Tammann	and Rabe.	1928				8.041 12.119	.(054	57.50 64.65	1.9 2.3	13	1
%						19.895	ij	076 142	69.54 79.74	2.7	' 05	
70	0°	10°	30°	75°	I	26.960 31.116	.2	21 <i>7</i> 296	79.74 85.58	3.8 4.2		
	···-					45.89		555				
7.41 13.80	1620.8 1539.8	1219.5 1169.3	787.9 787.2	396.0 407.6	I	 						
19.36 24.25	1501.0 1443.3	1169.3 1168.2 1179.2	789.4 803.2	424.0 439.8	ļ	1				_		
28.58	1502.2	1194.2	828.1	456.4	•	Campbe	ll. Kart	zmark and	l al., 19	5.3		
						8	n		1	η		
l					ļ	I	35°		25°			
Malquor	i. 19 2 9				1	1		- 0.00		~ ~		
t	η	t		t		0.0 0.432		2 0.05	540 89	93.7 92.4		
		0.95		1.431		7.9779 12.963	711.4	4 .70	009 85	63.5 6.4		
	4773N				- 1	14.533	713.2 721.1	.91 1 2.46	184 85 611 86	56.1 50.4		
14.8 35.6	1109 728	15.4 35.6 45.4	1078 738	14.2 35.7	1073.2 726	28.572 38.071	763.9	3.99	940 90	00.5 34.6		
45.6 60.0	728 629 510	45.4 60.0	640 5 2 4	45.6 60.0	630 519	47.424	763.9 842.7 974.8	7 5.53 7.16 7.71	185 113	32.4		
					!	50.378 59.378	1032.5	9.45	100 120 584 504 027 882)0 1 7		
						66.012	1613.9	10.80	127 882	:0		
					1	 						
					1							
					ŗ	4						
					P	u .						

l	1 and Debus,		(1)		Optical	and elect	rical pro	perties	
	η (water=l		η (water=1)		į				
0.80 8.51 16.06	1.011	180.0° 54.89 58.59	2.055 .237		Kanonni	kov, 1885	; 		
16.06 23.97 32.06 38.68	.168 .268 .395	61.96 69.70 76.50 84.07	.397 .819 3.340 3.980		%	t	Нα	n D	НВ
45.24 50.19	.524 .715 .862	88.63 100.00	4.650 10.100		16.61	20 21.6		1.33310 1.353968	
Sentis	, 1897				Doumer,	1892			
	%	t	<u> </u>		%	$\mathbf{n}_{\mathbf{D}}$	Z	$\mathbf{q}^{\mathbf{n}}$	
	0 0 1 1 2 3 10 10 20 20	13.5 25.1 18.0 25.2 18.0 18.0 24.9 14.25 24.8	74.0 72.3 73.8 72.8 74.4 75.1 77.4 79.0 81.7		0 5.35 13.34 20.41	1 1.3334 .3419 .3509 .3599	26.01 34.12 42.03 50.09	1.3674 .3778 .3883 .3986	
	20 20 20 20	16.7 17.0 3.2	82.8 82.9 84.4		Jones,	1904, Jon	es and Ge	tman, 1904	!
Famal	loos					M	0°	- Or	
Forch,	M	t	σ			0	· ·	1.33395	
	0 0.904 1.808 3.76 5.57 7.50	15 14.5 14.7 15.0 14.5 15.5	73.26 77.93 78.97 80.99 83.29 85.82			0.0 0.1 0.2 0.5 1.0 2.0	0	.32538 .32585 .32687 .32989 .33485 .34449	
				===	Zecchini	i, 1905			
Rehbind	er, 1926				%		t	n _D	
	σ	%	j			14	<u> </u>		
0 5 10 20	58.7 59.2 60.1 61.6 63.3	40 65 67 67 68 68 88 85 85	.5 .5 .5		0 7.056 19.600 28.115 44.306	16 16 16 16).2 8.7 9.9 0.9	1.33368 .34277 .35928 .37092 .39362	
30	03.3	100 103	. •						

Cheneveau, 1907			Guillaume, 1946
% n _D	% ⁿ D		% n 5780
199	>		24°
0 1.3331 7.42 .3421 14.49 .3512 17.06 .3554	21.15 1.35 27.45 .36 33.43 .37	82	11.8 1.3484 21.2 3605 28.6 3703 39.4 3850
¢ C D	n T1 F	ç,	Humburg, 1893
	9.8°		β (α) mol magn.
31.33 1.1388 1.37517	0.00233 0.00196	0.00543 0.00983	16°
			0 1.000 14.06 2.1702 23.48 2.150
Rower, 1910			
% n _D	% ⁿ D		Rower, 1910
25°			
12.096 .3458	27.553 1.3680 49.378 .3999 52.568 .4025 62.030 .5656		% (α) _{magn} , % (α) _{magn} . 25°
			0 5.068 27.553 4.693 10.485 4.801 49.378 4.505 12.096 .777 62.030 4.433 20.589 .726
Muller and Guerdjik	off, 1912		
% ⁿ D	% ^п D		
25°			Muller and Guerdjikoff, 1912
0 1.3326 10.49 .3455	27.55 1.3680 49.38 .3999 62.03 .4185		β (α) magn. D
12.10 .3458 20.59 .3582	62.03 .4185		0 4.864 10.49 .801
Lühdemann, 1935	ر سے اس اس اس اس سے اس سے اس اس اس اس اس اس اس		12.10 .777 20.59 .726 27.55 .693 49.38 .505 62.03 .433
N m n	N	ш u ^D	
	25°	· · · · · · · · · · · · · · · · · · ·	
2.0506 2.2864 2.7274 3.1599	33254 4.4434 34350 5.9211 35172 7.4564	5.7286 1.37284 8.4553 .38540 12.0204 .39811 12.0209 .39810	Mallemann and Guillaume, 1945 d= 1.0885 (α) _{magn.105} = 16.62

Guillaume, 1946	Jones, 1904; Jones and Getman, 1904
% (α) _{magn.106}	M A M A
24°	0°
11.8 3.756 21.2 .572 28.6 .431 39.4 .232	0.05 67.49 0.5 60.26 .10 65.05 1.0 54.97 .20 63.44 2.0 52.81
* in radians, gauss, centim.	
	Johnston, 1906
Okazaki, 1933	و المراقع المراقع المراقع من المراقع من المراقع ال
% Verdet's constant . 105	99.4°
28° 3514 Å 6.20 4130	10 81.8 0.5 238.7 8 100.5 .25 248.4 5 139.2 .10 274.4 2 197.1 .10 365.3 1 219.8
14.38 4092 24.30 4046 35.24 3996 37.25 4008 46.90 3920	Sloan, 1910
	M λ M λ
	0°
Kohlrausch, 1879 % × τ.10 ⁴ 18°	8.47 31.22 0.31 64.41 5.00 45.01 .16 66.87 2.50 54.05 .08 69.72 1.25 58.36 .04 71.45 0.62 61.20
5 553 204 10 1047 195 20 1930 180 30 2660 169 40 3158 161 50 3402 157	Rabinowitsch, 1921
30 3402 137	% × % ×
	100°
Dennhardt, 1899	1.00 390 40.9 7480 2.08 750 50.9 7920 5.27 1600 61.8 7630 10.50 3060 71.8 6730
M (18°) λ 0° 10° 18°	20.70 5140 81.4 5340 30.90 6610 86.8 4340
5 45.2 54.4 63.0 4 47.8 59.9 68.2 3 51.0 64.0 73.7 2 55.0 70.5 81.0 1 58.2 76.4 89.0 0.5 60.2 79.5 94.6	Malquori, 1929
1 58.2 76.4 89.0 0.5 60.2 79.5 94.6	t × t × t ×
	0,4773N 0,9546N 1,4319N
	14.8 445.4 15.4 847.1 14.2 1215.6 35.6 653.8 35.6 1211.6 35.7 1712.9 45.6 750.4 45.4 1387.8 45.6 1949.4 60.0 916.5 60.0 1679.4 60.0 2363.5

Campbell and Kartzmark, 1950	Heat constants.
8 M x 8 M x	Thomsen, 1871
24.99° 0.80 0.100 122.7 41.01 6.036 3809 7.81 1.004 1017 46.54 7.015 3979	mol% U
7.81 1.004 1017 46.54 7.015 3979 15.06 1.993 1833 51.98 8.011 4036 21.91 2.982 2513 57.31 9.043 3973	18°
28.74 4.020 3085 62.14 10.004 3819 34.93 5.014 3507 68.49 11.282 3538	1.0 0.962 2.0 .929 4.8 .859 16.7 .697
Campbell and Kartzmark, 1952	Winkelman 1979
8 x 8 x	Winkelmann, 1873
950	3.04 0.9654 20.00 0.8606
0.728 269 45.89 7696 1.605 534 53.12 7776 8.041 2340 57.50 7695 12.119 3257 64.65 7318	10.01 .9208 30.00 .8774 20.00 .8606 40.00 .7227
19.895 4781 69.54 6898 26.960 6008 79.74 5599 31.116 6529 85.58 4252	
38.130 7219 4252	Marignac, 1876
	% U % U
Campbell, Kartzmark and al., 1953	20-52°
8 и 8 и	4.28 0.9610 26.25 0.8090 8.11 .9293 37.21 .7437 15.09 .8797 47.06 .6942
35°	
0.4324 82.3 28.572 3545 7.9779 1222 38.071 4210 12.963 1881 47.424 4554	
12.963 1881 47.424 4554 14.533 2068 50.378 4590 18.352 2528 59.457 4465	Cohen, Helderman and Moesveld, 1924
66.012 4141	% U % U
	32.3°
Campbell, Kartzmark and al., 1954	10.03 0.9254 50.03 0.6847 19.22 .8620 61.31 .6297 30.03 .7931 69.46 .5935 40.06 .7379
4 M	
180°	Rutskov, 1948
0.7984 0.0890 474 58.590 8.534 11180 8.5160 0.9868 3752 61.995 9.170 11040	% U
16.077 1.922 6192 66.71 10.15 10630 24.028 2.982 8172 66.85 10.13 10500	25° 50° 75°
32.141 4.136 9718 76.42 12.14 9338 38.692 5.128 10580 78.84 12.70 8828	4.254 - 0.9620 0.9647 8.161 0.9286 .9310 .9338
50.190 7.029 11190 85.15 14 11 7817	18.188595 .8590 35.71 0.7510 .7495 .7480
54.907 7.854 11220 88.50 14.98 7003 100.00 18.00 4333	59.70 0.6280 .6520 .6210

Cohen and Helderman, 1924	Campbell, Kartzmark and al., 1954
% Q diss. initial final	% Q vap. % Q vap. (cal/mole) (cal/mole)
12.52	50° 10.00 10158 60.00 10054 20.00 10047 70.00 9999 30.00 9948 80.00 9834 40.00 10130 90.00 9759 50.00 9832
Mondain-Monval, 1925 mol% t Q diss	Water + Ammonium perchlorate (NH_uClO_u)
ر مو نور هو من من من من من من من من من من من من من	Freeth, 1924
0.87 0 ~6480 19 ~6200	% f.t. % f.t.
% t Q dil initial final (by mole salt)	9.8 -2.7 E 28.02 +45 10.74 0 33.64 +60 20.02 +25 39.45 +75
20.8	Mathieu, 1949 f.t. 4.709 -1.3 8.698 -2.4 9.443 -2.6
one mole of salt	% f.t.
Lerner-Steinbberg, 1926 initial 64% = 28.6 mol% mol% final Q dil mol% final Q dil 18.2°	1 atm. 250 atm. 500 atm. 15.35 12.75 12.95 13.47 18.00 19.90 20.76 21.76 18.93 22.40 23.23 24.27 22.54 32.00 33.39 34.79 28.76 48.25 50.01 52.78 33.97 61.60 63.61 65 62
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	15.35 14.32 15.50 18.00 22.90 24.18 18.93 25.53 27.00 22.54 36.18 37.58 28.76 53.54 55.30 33.97 67.63 69.64
21.6° 18.2° 0.604 2459 0.752 2522	

Carlton, 1910	d		onoammonium	phospha	te (H ₆ NO ₄ P)
11.5/2	1.059		Swan, 1922			
11.563 0 20.845 20 30.577 40 39.050 60 48.186 80 57.006 100 59.115 107 b.t.	1.059 1.098 1.128 1.158 1.193 1.216 1.221	19 20 21 22 23 24	sat. 13.30 14.20 15.12 16.09 17.11 18.06	sol 25 26 27 28 29 30	19.26 20.42 21.67 23.01 24.42 25.82	
Mazzucchelli and Anselmi, 1922	ļ	:				
% d						
15°	25°		d Merz, 1929			
2.072 1.0094	1.0070	t	p		t	p
3,728 .0174 4.352 .0236 6.515 .0310 7.685 .0373 8.768 .0436 11.713 .0578	.0147 .0207 .0282 .0340 .0403 .0544	10 15 20 25	8.94 12.44 16.50 21.91		30 40 50	29.18 50.05 81.56
12.447	.0579 .0628 .0700 .0731	Apfel, 19				
		M	f.t.			f.t.
Water + Ammonium trinitrate (${ m H_6N_u}$,0 ₉)	1.73 2.375 2.50	0 25 25		3,569 4,35 4,93	50 70 83
Groschuff, 1904 mol % f.t.		Buchanan	and Winner,	1920		
39.1 - 8.0 42.9 - 2.5		%	f.t.	%	f.t.	
47.4 + 3.0 53.1 + 8.5 69.2 +19.5 81.8 +25.0 100.0 +29.5		20.35 26.3 31.6 36.2 40.8	30.0	49.7 59.0 63.6 67.6	69.0 90.0 102.0 110.5	
Water + Halfammonium phosphate (}	1 ₉ NO _B P ₂)	Bergman a	and Bochkare	v, 1938		
Parravano and Mieli, 1908		%	f.t.	%	f.t.	
\$\frac{64.10}{74.07} \text{48.5}{66.2} \\ \frac{84.48}{84.48} \text{92.5}{86.38} \text{97.0}{92.58} \text{109.8}{95.80} \text{112.8}{12.8} \text{100.00} \text{118}		0 4 8 12 16 17 18 E: 17.	0 -1.0 -2.0 -3.0 -3.8 -4.1 -4.3	19 20 22 24 26 28 30	+2.7 5.1 11.0 16.9 20.8 25.9 29.3	
					·	

		I				
Polosin and Ozolin, 1940		 Water + Dia	mmonium nbo	sphate (H	oNoOoP)	
% f.1. % f.1. %	f.t.	na cer · bia	pilo.		2-18-4.	
4 -1.0 15 -3.48 24 5 -1.26 16 -3.8 28 8 -1.9 17 -4.0 30 10 -2.37 18 -4.2 32 12 -2.85 20 +4.0 36	13.46 22.80 27.43 31.76 40.43	8 30.0 38.4	f.t. 0	920 % 45.05 47.1	f.t. 40 50	
Polosin, 1946		40.8 42.6	20 30	49.4 51.5 =======	60 70	
% f.t. % f.t. %	f.t.					
6.0 -1.5 20.0 +4.6 27.0	22.2	Chomjakow,	Jaworowskaja	and Schi	rokich,	1933
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	29.0 35.4	%	đ	%		đ
18.8 -4.4 25.0 17.0 36.0	41.9	31.59 36.48	1.1918 1.2198	23° 39.1 2 sat.s		1.2354 1.2465
Polosin and Treshchov, 1953						
% f.t. % f.t		Janecke, 1	936			
10 - 3 30 +27		%	f.t.	×		f.t.
10 - 3 30 +27 16.9 - 4.3 E 35 +39 20 + 3) 	63.0 65.9 74.8	123-117 130.132 163-159	80. 83.	6 1; 1 1;	84-180 91-193
Christen Incommunication of Schirokish 1923	1		·		======	
Chomjakow, Jaworowskaja and Schirokich, 1933	, d	Chomjakow,	Jaworowska i	a and Schi	rokich.	1933
23°		mol % Q di		Q diss		Q diss
10.950 .0619 27.953 .15	938 125 580 597	0.53 -298 1.05 -278 1.56 -263 2.07 -252 2.58 -242 3.08 -235	9 4.08 5 4.57 7 5.50 5 5.53	-2288 -2235 -2164 -2134 -2110	6.49 6.74 7.07 7.60 8.14	-2090 -2112 -2073.9 -2061.5 -2053
Gladstone and Hibbert, 1897		3.08 -235				
# molar refraction H _Q D H ₃ room t. 11.51 32.6 33.15 32.88	ر میں میں میں بنی مار سے سال اور میں میں میں مار سال اس	Water + Amm	nonium Dibor	ate (H ₈ B ₁	N ₂ O ₇)	
21.40 32.40 32.75 32.80		Shorgi and	Ferri, 1922			
			f.t.		f.t.	
Chomjakow, Jaworowskaja and Schirokich, 193 mol % Q diss mol % Q diss mol % Q	3 diss	7.78 10.80	$\begin{array}{ccc} 0 & 1 \\ 10 & 2 \\ 20 & 4 \end{array}$	5.77 8.41 9.48 1.17 2.68	40 45 60 75 90	
0.91 -3874 3.11 -3783 4.45 -3 1.30 -3848 3.55 -3787 4.89 -3	787 782.4 778.5 776	13.01	25			

Water + Ammonium pentaborate (H _B B _{1 o} N ₂ O ₁₆)	% d % d
	1.400/
Sborgi and Ferri, 1922	33.81 .1846 60 .2429
% f.t. % f.t.	36,40 .1943 75 .2629
	37.80 .1995 80 .2716 39.29 .2042
$egin{array}{cccccccccccccccccccccccccccccccccccc$	39, 29 .2042 40,77 .2097 42, 32 .2155
5.39 +10 18.25 60 7.07 20 24.40 75	43.96 .2203
$egin{array}{cccccccccccccccccccccccccccccccccccc$	
	Vacilarka 1050
Water + Ammonium Hudrogen corbenate (CH NO.)	Vasilenko, 1950
Water + Ammonium Hydrogen carbonate (CH ₅ NO ₃)	% f.t. % f.t.
, , , , , , , , , , , , , , , , , , ,	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Janecke, 1929	
% f.t. m.t. % f.t. m.t.	17.3 6.6 35.9 13.2
11.2 13.9 13.7 53.2 - 74.8	20.0 7.8 37.7 19.1 22.4 9.2 39.3 25.2 24.7 10.6 40.8 +30.3
13.65 24.4 24.2 56.7 - 81.2 27.6 42.4 42.1 63.1 - 89.8	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
36.8 48.5 48.4 90.0 111 105 33.9 54.6 54.4 95.0 111 108	E: 28.5% -13.0°
33.9 54.6 54.4 95.0 111 108 43.2 63.6 63.6 100.0 - 108	
Water + Ammonium sulfite (${\rm H_8N_2O_3S}$)	Water + Ammonium hydrogen sulfite (H ₅ NO ₃ S)
	,
Yasuda, 19 2 4	Vasilenko, 1948
ر من امر اس من اس اس من اس من اس اس اس اس اس اس من اس اس اس اس اس اس اس اس اس اس اس اس اس	4
10.05	
40.32 12 48.59 30 42.65 15 50.24 40	9.4 -3.4 63.6 -24.8 16.8 6.0 64.4 21.7
42.65 15 50.24 40 45.15 20 57.06 50 47.096 25 63.37 60	$\begin{bmatrix} 22.7 & 8.7 & 65.0 & 21.0 \\ 27.5 & 10.2 & 66.3 & 16.7 \end{bmatrix}$
2 2 33.07 00	30.9 12.2 66.4 17.0
	40.3 166 6 9 .4 10.0
	H 48.5 21.5 70.7 3.3
Ishikawa and Murooka, 1933	53,2 25,0 /2,3 -0,2
% f.t. % f.t.	1 57.8 2 9.0 73.1 5.1
	59.1 -29.0 75.6 13.8 76.6 15.7
5.162 - 1.82 39.29 25	
9.698 - 3.35 40.77 30 13.044 - 4.61 42.32 35	
16.817 - 6.27 43.96 40 20.505 - 7.97 47.26 50	
23.652 - 9.69 50.94 60 28.418 -12.74 54.71 70	
28.850 -12.96 56.52 75	
32.40 0 59.53 85	
33.81 + 5 60.00 90 35.05 +10 60.30 95	
36.40 +15 60.44 100	
$(1+1)$ tr.t. = 80.8°	

Water + Ammonium selenite ($H_8N_2O_3Se$)	Water + Ammonium sulfate ($!!_8N_20_{\mbox{\tiny k}}S$)
	Heterogeneous equilibria
Janickis, 1934	Tamponn 1995
% f.t. % f.t.	Tammann, 1885
45.12 -20.0 56.00 +32.0 47.18 -8.5 57.13 35.2	0% 13.93% 32.89% 33.20% 40.91%
47.18 -8.5 57.13 35.2 49.21 +1.0 59.90 43.0 51.99 14.0 62.31 50.0 54.70 25.0 69.03 70.0	31.97 35.6 34.6 33.9 33.7 32.1 37.47 48.3 47.1 44.7 44.7 43.6 41.11 58.7 56.5 54.0 53.7 52.6 43.35 66.0 - 60.7 60.6 59.9 46.03 75.8 73.5 70.0 69.9 68.2
Water + Ammonium tetraselenite(H ₇ NO ₆ Se ₂) Janickis, 1934	49.26 89.2 85.6 81.8 81.9 79.9 51.98 102.0 98.8 93.9 94.0 91.7 54.88 117.4 113.2 107.8 107.8 105.0 57.60 133.6 129.0 122.3 121.8 118.9 60.85 155.3 150.3 142.6 142.7 139.1 63.14 172.6 166.5 158.2 158.6 155.1 66.91 204.3 197.6 187.3 187.2 183.4 70.20 235.8 227.4 216.1 216.6 211.4 72.71 262.6 253.7 241.6 241.1 236.1 74.32 281.2 271.8 258.6 258.4 253.2
% f.t. % f.t.	76.28 205.3 295.4 281.2 281.3 274.9 79.22 344.4 333.9 316.7 317.3 309.9 81.20 373.1 360.6 343.1 343.7 337.1
60.08 -14.8 73.61 +0.1 64.58 -10.3 79.30 8.8 68.76 -5.8 85.11 18.0 91.02 30.0	90.86 543.5 527.0 501.6 502.5 491.5 93.04 589.6 569.7 543.2 544.2 531.6 94.82 630.0 609.0 580.9 581.0 568.5
Water + Ammonium pyroselenite(H _B N ₂ O ₅ Se ₂) Janickis, 1934 * f.t. % f.t.	97.07 683.9 659.9 630.5 629.9 617.1 100.09 762.3 738.0 704.8 704.7 691.5 *** p
49.62 -15.0 82.29 +32.0	
52,86 -10,0 86,23 33,0 56,84 0.0 86,35 33,2	Adams and Merz, 1929
66.65 +15.0 86.43 34.0 69.50 20.0 87.23 45.1 73.24 25.0 88.78 57.2 79.74 +30.0 90.56 70.1	t p t p
79,74 +30,0 90,56 70,1 (3+1)	sat.sol. 10 7.29 30 25.22 15 10.16 40 43.32 20 14.22 50 71.93 25 19.50
	Gerlach, 1886
	% b.t. % b.t. % b.t.
	0 100 30.65 103 46.10 106 7.24 100.5 33.81 103.5 48.00 106.5 13.34 101 36.71 104 49.78 107 18.57 101.5 39.28 104.5 51.43 107.5 23.14 102 41.79 105 52.95 108 27.12 102.5 44.02 105.5 53.55 108.2

Buchanan,				Mulder, 18			غو جب الجوافية حب جب حدد العدد العدد العدد المدادة العدد المدادة العدد العدد العدد العدد العدد العدد
<u> </u>	b.t.	%	b. t	8	f.t. %	f.t.	
51.04 50.50 48.47 46.80 44.93 43.06	108.09 107.80 107.21 106.70 106.21 105.72	7.15 mm 40.96 38.71 36.12 32.24	105.22 104.73 104.23 103.74 100.28	41,35 42,30 42,40 43,50 45,11 45,59 46,41	0 46.6 10 47.3 13.5 48.6 26 48.6 44.5 50.5 47.25 50.4 55.3 51.8	1 57. 1 66. 9 78. 9 79 8 99. 0 108.	5 25 5 7 9 (b.t.)
49.88 44.96 41.30		27.30 23.18 21.25 19.32 17.12 14.87	101 . 93 101 . 42 101 . 22 101 . 02	de Coppe	·		
36.57 33.74	103.45 102.94	17.12 14.87	100 82 100 62	%	f.t.	%	f.t.
30.80 50.58 51.59 47.26 43.31		0 0.33 mm 38.80 32.78 25.95 0	99.40 98.75 97.74 96.73 94.41	9.09 16.67 23.08 28.57	- 2.8 - 5.45 - 8.2 -11.1	33.33 35.48 37.50 39.32	-14.4 -16.2 -18.0 -20.4
50.46 52.56 48.91	619	6.35 mm 45.54 0		Rudorff, 1	f.t.	Z	f.t.
50.22 53.79 45.61	98.40 98.31 97.06	9.36 mm 41.41 36.39 0	96.05 95.03 91.16	3,85 7,41 9,09 13,79	- 1.10 - 2.30 - 2.80 - 4.20	16.67 19.35 23.08 26.47	- 5.20 - 6.30 - 7.90 - 9.70
50.03 50.22 46.51 42.54	98.54 98.28 97.47 96.46	37.79 31.34 24.35	95 45 94 34 93 43 91 30	Guthrie, 1	876 f.t.	g	f.t.
Johnston,	1907			10 20 28.6 40	- 2.6 - 6.0	41.7 41.9 43.2	-17.0 E 0.0 +19.0
8	b.t.	N b.t.					
	100.081 0	.048 100.039		Bodlander,	1891		
5.04 24.8 31.4	100.398 102.132 103.014	.048 100.039 .092 100.071 .168 100.103 .236 100.138	3		Я	f.t.	
38,8 39,9 41,0 42,1	103.014 104.298 104.576 104.979 105.317	. 294 100. 163 .374 100. 193 .436 100. 236 .518 100. 275	3 1 5		42.38 42.62	9 15	
43.3 44.1	105.374 105.608 105.822 106.258	,612 100,321		Jones, 190	4 and Jones and		
				0.05 0.10 0.20	-0.024 -0.469 -0.818	0.50 1.00	-1.969 -3.686 -5.133
						1.40	V.133

de Waal, 1910		Bergman	and Sholol	havich	1042	
% f.t.		3	f.t.	%	f.t.	,
41.4 0 44.3 30 47.81 70		3.23 6.25 9.09 10.00 12.12	-0.9 1.9 2.7 3.3 3.5	33.33 34.75 36.16 37.50 38.15	-14.0 14.9 16.0 17.2 17.8	
Rodebush, 1918 # f.t. #	f.t.	14.29 16.67 18.91 20.0 30.0	4.5 5.0 5.7 6.2 -11.6	38.76 40.60 43.00 43.08 E: 39.4	18.2 -11 +20 +29 % -18.85°	
22,40 -7,10 34,47 24,26 -7,94 37,20 28,97 -10,15 38,86 29,15 -10,43 39,90 31,86 -12,00	-13,99 -15,99 -17,49 -18,34 E	Vasilenk				
La++ov 1022		· - [%]	f.t.		f.t.	
Lattey, 1923 # f.t.	سيد جين سدر حدر سيد مند مند فيو فيد الجد التي الجد فيد الي الدار الذي الدو الدو الدوا	4.8 9.1	-1.5 2.8	33.3 35.5	-13.8 15.0	
42.83 16.5 46.05 51.8		13.0 16.7 20.0 25.1 25.9 28.6	4.2 5.4 6.7 7.9 9.5 10.8	37.5 38.7 40.8 41.9 42.9 43.8	16.8 18.8 -1.0 +9.8 20.2 31.4	
Ishikawa and Murooka, 1929 an	8	31.0	11.8	44.8 ===================================	42.4	
-1.05 3.246 +20 -1.99 6.516 25	43.00 43.47	m ₁	m ₂	m ₁	m ₂	
-1.09 6.516 25 -3.70 12.233 30 -5.28 17.102 40 -18.50 39.75 50 -11.50 40.42 60 -6.55 40.59 70 0 41.22 80 +5 41.65 90 10 42.11 +100	43.87 44.80 45.75 46.64 47.54 48.47 49.44 50.42	0.1294 .2171 .2809 .4536 .5682 .7454 .9376 1.076	0.1581 .2562 .3251 .5039 .6179 .7889 .9686 1.094 .370	3.174 3.592 4.051 .289 .451 .552 .691 .772 5.301	2.923 3.293 .681 .883 4.015 .099 .217 .286	
ر خور بدر حو اس استونی می کارد و در در در در در در در در در در در در در	سور جوم میں افغان امیر امیر جی امیر امیر امیر امیر امیر امیر امیر امی	.755 2.068	.696 .969 2.173	.486 .596 .830	.869	
Pannach Cital	_	.305 . 7 39	2.173 .545	.830	.959 5.145	
Benrath, Gjedebo and al., 1937		l .	onium sulf			
54.5 138 67.5	283	2 - Sodi	ium chlori	ide ========		
55.9 154 67.6 57.2 173 69.3 59.5 199 70.8 60.8 216 72.1 61.5 219 72.6 62.5 231 75.1 63.9 242 76.1 64.4 253 77.2 65.5 261 79.6 65.5 266	287 304 312 335 342 356 368 389 410					

Properties of phases .	Klein, 1886
	N d N d
Schiff, 1860	18°
% d % d	
19°	1 .0360 3 .1031 1.5 .0523
0 0.9984 27 1.1536 1 1,0041 28 .1594 3 .0099 29 .1652 4 .0156 30 .1706 4 .0214 31 .1761 5 .0271 32 .1817 7 .0387 34 .1929 9 .0510 36 .2041 10 .0558 37 .2097 11 .0615 38 .2153 12 .0673 39 .2209 13 .0673 39 .2209 14 .0730 40 .2265 15 .0845 42 .2382 16 .0845 42 .2382 17 .0903 43 .2442 18 .1078 44 .2502 18 .1075 45 .2563 20 .1131 46 .2624 21 .1189 47 .2685 22 .1247 49 .2808 24 .1363 .2870 25 .1421 26 .1478	Rontgers and Schneider, 1886 8
Kohlrausch, 1879	Bodl ["] nder, 1891
g d	% t d
15° 1.0292 10 .0581 20 .1160	42.38 9 1.2439 42.62 15 1.2429
30 .1730 31 .1787	Gilbault, 1897
w	% d
Kanonnikov, 1885	20° 0 0.9982
0 20 0.99827 29.41 25 1.16770	$\begin{array}{cccc} 0 & 0.9982 \\ 10 & 1.0556 \\ 20 & 1.1129 \\ 30 & 1.1763 \\ 40.112 & 1.2268 \end{array}$

Forchheimer, 1900	Lunge and Köhler, 1912
% d % d	% d % d
20°	15°
0 0.9982 23.01 1.1319 6.275 1.0352 32.99 .1858 10.88 .0626 40.28 .2289	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Brümmer, 1902	5 .0278 31 .1770 6 .0336 32 .1826 7 .0394 33 .1882 8 .0451 34 .1938 9 .0509 35 .1993 10 .0566 36 .2049 11 .0623 37 .2105 12 .0681 38 .2161 13 .0738 39 .2217
8 d	10 .0566 36 .2049 11 .0623 37 .2105
15°	12 .0681 38 .2161 13 .0738 39 .2217
0 0.9993 10.215 1.0586 19.871 .1142 29.802 .1713 38.825 .2254	14 .0796 40 .2273 15 .0853 41 .2332 16 .0910 42 .2391 17 .0967 43 .2451 18 .1025 44 .2511
	20 .1139 46 .2633 21 .1197 47 .2694 22 .1255 48 .2755
, Cheneveau, 1907	1 23 .1313 49 .2817
الله المراقب المراقب المراقب عن مواهد من من المراقب ال	24 .1371 50 .2879 25 .1429
% d % d 19° 15°	
0 0.9984 38.35 1.2196 6.46 1.0369 12.54 .0723	Pulvermacher, 1920
18.74 . 1051 23.61 . 1359	N d N d
28,64 .1655	25°
Dixon and Taylor, 1910	0.489 1.0158 4.894 1.1593 0.979 .0336 5.873 .1851 1.958 .0682 6.851 .2119 2.936 .1000 7.830 .2358 3.915 .1302
M t d	
0 16 0.9990 8.158 17 1.2259 8.292 16 1.2267	Manchot, Jahrstorfer and Zepter, 1924
	c d
	25°
Wiener, 1911	17.786 1.0896 18.158 .0911 28.807 .1393 30.464 .1501
c d	30.464 .1501
20°	
6.65 1.039 13.3 .077 26.6 .138 39.9 .195 53.2 .248	

Ishikawa and Murooka, 1929 and 1933	Rontgers and Schneider, 1886
% t d	π (relative)
41.22 0 1.242 41.65 5 .242	17.8°
41.65 5 .242 42.11 10 .243 42.52 15 .244	8.74 0.849 16.22 0.732
43.00 20 .245 43.47 25 .246	16,22 0,732
43. 87 30 .247 44. 80 40 .248	
45.75 50 .248 46.64 60 .249	
47.52 70 .250 48.47 80 .251	Gilbault, 1897
49.44 90 .253 50.42 100 .257	Æ π (1-300 atm.)
	20° 0 44.37
Gibson, 1934	10 39.58 20 34.79
mol % d mol % d	30 30.06 40.112 25.22
25°	
0 0.9970 20 1.1136 6.20 1.0336 25 .1421	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Gibson, 1934
15 1.0850 40 .2257	mol % π mol % π
	(1-1000 bars) (1-1000 bars)
Observici 1025	25° 0 39.46 20 33.54
0kazaki, 1935 % d	6.20 36.82 25 31.25 10 35.40 30 30.22
	14 34.03 35 29.74 15 33.67 40 29.17
8,87 1,0482	
16.94 .0950 25.63 .1445	
32.27 .1816 40.30 .2262	de Lannoy, 1895
	t relative volume
Guillaume, 1946	4% 12% 20% 50%
% t d	0 1.00000 1.00000 1.00000 1.00000 10 .00100 .00200 .00254 .00281
8 4 20 1.0481	20 00280 00458 00544 00573 30 00570 00771 00877 00880
15.7 20 .092 41.2 10.5 .238	40 .00928 .01143 .01646 .01196 50 .01340 .01560 .02073 .01530
	60 01831 02021 02540 01878 70 02371 02525 03040 02248
	80 02972 03073 03532 02633 90 - 03660 04144 03040 100 - 03442
Schmidt, 1859	
d π	
18°	
1.157 30.8 1.178 25.2	

Viscosity and surface tension	Jones, 1904; Jones and Getman, 1904
	M n _D M n _D
Pulvermacher, 1920	0.0
N η(water=1) N η(water=1)	
25° 0.489	0.05 1.32593 0.50 1.33338 0.10 .32711 1.00 .34131 0.20 .32829 1.40 .34807
	, Cheneveau, 1907
"	% n _D % n _D
Brummer, 1902	19°
15° 0 74.92 29.802 79.90 10.215 78.17 38.825 83.07 19.871 79.30	0 1.3331 18.24 1.3615 6.46 .3435 23.61 .3698 12.54 .3530 28.64 .3772 15.43 .3574
	n n
	C D T1 F G'
Forch, 1905	38.35 1.38961 1.39170 1.39411 1.39644 1.40011
N t o N t	38,35 1.38901 1,39170 1,39411 1,39644 1,40011
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Dixon and Taylor, 1910
	M t ⁿ D
Optical and electrical properties	0 16 1.33329 8.158 17 .39246 8.292 16 .39275
Kanonnikov , 1885	
* t n	
$^{\prime\prime}$ $^{\prime\prime}$ D $^{\prime\prime}$ H ₃	Pulvermacher, 1920
0 20 1.33130 1.33310 1.33738	N n _D N n _D
29,41 25 1,375656 1,377781 1,38299	25°
Walter, 1889	0.489 1.3385 4.894 1.3765 0.979 3431 5.873 3831 1.958 3524 6.851 3900 2.936 3612 7.830 3958 3.915 3693
% п _D	
0 15° 1,3334 4.38 .3402 8.97 .3473 20.90 .3656 43.30 .3983	

Guillaume, 1946	Kohlrausch, 1879
≅ t n 5780	% х т.10 ⁴
8.4 20 1.3470 15.7 20 .3597 41.2 19.5 .3968	18° 5 549 216 10 1007 204 20 1772 194 30 2283 192 31 2311 192
Guillaume, 1946	
% t (α)5780, magn, 106	Klein, 1886
8.4 20 3.870 15.7 20 .782 41.2 19.5 .455	N × τ.10 ⁴
In radians, gauss, centim. Forchheimer, 1900	0,5 359,7 422,8 218 1 648,7 756,5 209 1,5 895,9 1043,6 206 2 1143,1 1327,7 202 2,5 1346,8 1560,6 198 3 1551,6 1793,8 195
% (α)magn. % (α)magn.	0 1001,0 1776,0 170
20° 6.275 0.683 32.99 0.675 10.88 0.675 40.28 0.679 23.01 0.663	Jones, 1904 and Jones and Cetman, 1904 M
Okazaki, 1935 % Verdet's constant (3441 Å)	0.05 100.60 0.50 80.03 .10 95.84 1.00 72.55 .20 86.15 1.40 69.30
28° 8.87 0.04496 16.94 .04546 25.63 .04611 32.27 .04679 40.30 .04702	Johnston, 1907 N λ N λ 100°
Berggren, 1877	
1.96 8.5 193 10.71 7 808 2.15 8 210 13.04 8 993 2.91 7.8 266 15.21 7.3 1111 3.84 7.7 333 16.66 7.2 1165 5.66 7.7 456 20.00 6 1323 6.54 7.8 523 23.07 8.3 1547	Marignac, 1876 % U % U
6.54 7.8 523 23.07 8.3 1547 7.41 8 595 28.57 8.3 1742 8.25 7.3 654 33.33 7.8 1858 9.09 7.8 733 37.11 8.3 1912 9.91 8.3 776 40.50 8.5 1929	19-51° 3.54 0.9633 22.62 0.8030 6.79 .9330 32.74 .7385 12.73 .8789

Water + Ammonium acid sulfate (${ m H_5NO_{L}S}$)	Water + Ammonium dithionate (${ m H_8N_2O_6S_2}$)
Tammann, 1885 % P % P	Tammann, 1885
100°	% Р % Р
8,51 741.4 35.40 647.4	100°
15.44 723.1 36.28 643.1 21.95 702.8 50.12 563.5 28.61 677.4 58.55 502.5	8.33 747.9 35.32 676.3 12.61 738.3 39.74 662.8 23.28 715.6 43.05 643.8 27.75 702.9
Grunert, 1925	De Baat, 1926
3.5N 1.75N 0.875N 0.4375N	% f.t.
20 1762 1301 1138 1068 40 1155 860 751 704 60 833 618 540 504 80 643 478 419 391	57.05 0 60.14 10 62.43 20 64.60 30
Herz and Knaebel, 1928 M	Water + Ammonium trithionate (${ m H_8N_20_6S_3}$)
3.500 77.92 74.42 71.77 69.32	Kurtenacker and Laszlo, 1938
1.750 74.91 72.49 69.15 67.05 0.875 73.96 70.95 67.93 64.90 0.437 73.11 69.83 66.13 63.44	% f.t.
0.437 73.11 69.83 66.13 63.44	53.0 0 56.0 20 58.2 30
Gillespie and Wasif, 1953	
М н М н 25°	Water + Ammonium tetrathionate (${ m H_8N_2O_6S_4}$)
0.0268 108.5 0.3214 326.9 .0417 115.0 0.6152 500.0 .0600 130.0 1.0384 677.6	Kurtenacker and Laszlo,1938
.0825 145.0 .2984 760.3 .1066 168.0 .4836 811.4	% f.t.
1199 175.8 .6660 860.2 .1381 196.0 .9002 906.1 .1773 230.0 .9990 922.6	51.0 54.2 56.2 0 30
ľ	

	nonium sulfamat)	Water + Ammoniium fluoborate (BF ₄ H ₄ N)
	d	 N	d	Tammann, 1885
	u 25			% p % p
0:1185 0.2074 0.2958 0.4765 0.6863 0.8254 1.0245 1.2778	1.0030 .0091 .0125 .0218 .0310		1.0902 .0946 .1659 .2435 .3011 .3402 .3830	100° 9.25 739.2 21.24 704.1 12.23 728.9 21.40 703.7 12.52 727.9 21.59 700.3 15.79 719.5 31.38 657.3
Schmelzle	and Westfall,	1944		Yatlov and Pinayevskaya, 1945
N	η (H ₂ 0=1)	N	η (H ₂ 0=1)	f.t. % f.t.
0,1185 0,2074 0,2958 0,4765 0,6863 0,8254	1.0054 1.0054 1.0054 1.0185 1.0244 1.0334 1.0426	1.8263 1.9127 3.4105 5.0832 6.3656 7.1813	1.1198 1.1226 1.3136 1.6708 2.1874 2.7543	3.00 -1.0 30.60 +50.0 5.00 -1.5 40.30 75.0 9.79 -2.7 E 49.73 100.0 10.87 0.0 53.20 108.5 20.53 +25.0
1.0245 1.0513 8.1696 3.8298 1.2778 1.0734 8.1696 3.8298 ==================================				Water + Ammonium fluosilicate (F ₆ H ₈ N ₂ Si) Tammann, 1885
m 10	0.4			8 p
Tutton, 19		*	و سور در چی این شم کانونی میدانی کانوانی شی میباد.	100°
53.97 62.12 66.32	f. 7 59 100	,		9.31 746.7 17.11 734.1 21.81 724.9 28.14 712.8 30.65 706.5
%	spontaneous c	rystallizati	on	
55.42 55.90 56.56 58.76		2 5		Yatlov and Pinayevskaya, 1945 **Example 1945**
Water + Ammonium thioantimonate ($H_{12}N_{3}S_{\iota_{\!4}}S_{b}$)			_{1 2} N ₃ S ₄ Sb)	5 -1.3 13.91 10.0 10.23 -1.2 14.69 12.0 10.94 0.0 14.77 13.0 14.01 +10.0 15.53 14.0 14.63 12.0 15.60 15.0 14.60 13.0 18.32 25.0 15.46 14.0 26.15 50.0 15.63 15.0 32.83 75.0
Donk, 1908				H 18 75 25.0 38.18 102.1
9.9 19.0 26.0 40.1	f.t. -1.9 41 -4.5 41 -6.5 43 -12.1 54	$\begin{array}{ccc} .6 & 0 \\ .2 & +10 \end{array}$		26.14 50.0 32.35 75.0 37.90 100.0 * polymorphic forms of fluosilicate

Ci	
Simpson and Glocker, 1953	Water + Hydrazine nitrate ($N_3 H_5 0_3$)
% f.t. % f.t.	Samura 1014
11.58 1.7 24.20 43.3 14.10 10.0 26.49 51.7	Sommer, 1914
l 16.74 18.3 28.75 60.0 l	% f.t. % f.t.
19.34 26.7 30.91 68.3 21.85 35.0	66.63 10 85.86 40.02 68.47 15 88.06 45.02
	72.70 20.01 91.18 50.01 76.61 25.01 93.58 55.01
	80.09 30.01 95.51 60.02 83.06 35.01
Water + Hydrazinium chloride (N_2H_5C1)	
Seward, 1955	5
mol% d η λ	Semishin, 1943
25°	mol% f.t. E mol% f.t. E
0.35 1.001 899 107.2 2.85 .035 924 87.3	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
8.07 .092 1074 69.8	$\left[\begin{array}{cccccccccccccccccccccccccccccccccccc$
15.03 .149 1390 50.5	17.4 +0.8 -9.1 60.6 48.7 - 20.6 5.4 - 66.2 51.8 -
20.50 .182 1920 37.6 28.20 .224 2900 26.3	20.6 5.4 - 66.2 51.8 - 26.1 11.9 - 9.3 71.0 54.8 - 31.6 18.1 - 74.5 57.3 - 33.3 21.2 - 9.1 80.0 60.2 - 36.2 23.8 - 9.2 84.9 62.9 - 38.8 26.4 - 89.2 65.6 - 41.3 29.6 - 93.0 67.8 -
95∘	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
0.35 0.968 304 284.0	
2.85 0.998 340 208.4 8.07 1.052 415 155.6	44.3 + 32.6 (-9.8) 100.0 70.8 -
11,29 ,082 490 131,8 15,03 ,110 560 111,5	نوان کا ان اور ان اور ان اور ان اور ان ان ان ان ان ان ان ان ان ان ان ان ان
20.50 .149 703 88.30 28.20 .186 989 64.07 38.40 .227 1550 43.90	
50.65 .266 2683 28.00	Seward, 1955
69.80 313 6250 13.37	mol% d η λ
91.50 .352 16220 5.78	25°
100.00 .363 23440 4.10	0.23 1.002 895 103.6 0.98 .018 892 88.1
وان ها المحمد عبد المحمد المح	2.10 .040 908 79.8
Schiff and Monsacchi, 1896 and 1897	4,25 .083 951 67,3 9,23 .163 1157 50,4 15,8 .242 1580 36,34
	27.2 340 2754 22.10 38.7 .403 4437 14.55
% d % d	
0 0.9982 15 1.0675	75°
5 1,0206 20 1,0923 10 1,0436 25 1,1183	2.1 1.017 404 160.4 4.8 .063 447 130.9 7.5 .113 512 108.3
27.2% f.t. = 23°	11.2 .160 606 88.83
1 may 100 miles and 100 miles	22.9 .277 1043 53.78
	30.7 .334 1415 40.40 43.3 .402 2280 27.02 63.5 .472 4300 15.39
	78.2 .510 .6500 10.42 100.0 .549 11510 6.12

	II					_
Water + Hydrazine perchlorate ($ ext{ClH}_5N_2O_4$)	% 	l atm	250 atm	f.t. 500 atm	750 atm	1000atm
Carlson, 1910	45 50 55	15.28 29.43 42.81	16.14 30.34 43.81	17.14 31.51 45.08 58.06	18.38 32.88 46.64	19.77 34.53 48.46
	60 65	55.57 67.83	56.65 68.99 81.01	58.06 70.53	46.64 59.78 72.44 84.76	61.84 74.72 87.27
	70	79.73	81.01	70.53 82.68	84.76	87.27
41.72 33.00 18 1.264 66.90 48.03 35 1.391	9		d			,
		1 7 °				
Water + Hydrazine sulfate (${ m H_6N_2O_4S}$)	9. 24,	48 96	1.0410 1.1117	=======	========	
Benrath, 1942						
% f.t. % f.t.	Schi	ff and Mo	nsacchi, 1	896 and 1	897	
ر مدر سر ال بن بن من من سر الم أما أن من من من من من من الم أما أن من من من من من من من من من من من من من	%			%	d	
14 94 45 163 20 108 50 174			17°			
$\begin{bmatrix} 25 & 118 & 55 & 186 \\ 30 & 129 & 60 & 198 \end{bmatrix}$		0.9		4 1	.0616	
35 143 65 208 40 152 70 216		1.0	147 2	0	.0388	į
,,	7	.0	303 4		. 1852	
	10 45		437 f + - 17	0		
			f.t, = 17			
Water + Hydroxylamin hydrochloride (C1H ₄ NO)	======					
Tammann, 1886						
% P						
100°						
9.48 725.8 14.39 705.2 16.53 694.4 25.50 650.5						
16.53 694.4 25.50 650.5						
Mathieu, 1949						
% f.t. % f.t.						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$						
1 5 000 -2 77 57 314 48 7 1						
15.431 -9.40 60.709 59	ĺ					
24,960 -17,10 62,074 60,6 29,380 -20,95 65,377 68 31,446 -22,92 74,224 89,6						
32,957 -22,60 78.061 98.4						
39.700 -0.90 100 150.5						

HYDROGEN + METHANE

V. NON-MI	ETALLIC INORGA	NIC SUBSTAN	CES + ORGA	NIC	Hyd	rogen (H ₂) + 1	Ethane	(C ₂ H ₆	;)	
SUBSTA	ANCES .				Wil	liams, l	1954 (fig.)			
LXIX. ELE	EMENTS + ORGAN	ITC COMPOSINO	nc		P Kg		nol %		P Kg	mo]	-
	DALATO . ORGAL	TC COMPOUND	- •		 	L	v	-170°		L	V
Hydrogen	(H ₂) + Meth	ane (CH ₄)	1		28 70 165	99.5 99 98	; <u> </u>	_ 1 2 9°	280 420 560	97 96 95	-
	and Tsin, 193	9 (fig.)			14	99.5	5 1		280	92.5	0.5
P	mol% L V	P	mo1% L	v	70 135	98 96	0.2 0.2		500 700	88 84.5	1 1.5
1 5 10 20 30	100 100 99.5 14 99 10 98 6 97 4	40 50 60 90	95 92 91 90.5	4 4 4 4	14 42 70 140	99 98 96.5 9 7	8.5 4 2.5 2	-87°	280 500 700	86.5 78.5 71	2.5 3 4
					15 20 63 140	99.5 96 90	48 37 13 10	-18°	210 350 700	80.5 75 51	9 10 16
Trautz an	nd Sorg, 1931				35 63	98 95	52.5 35.5		245 350	76.5 63.5	21 23.5
%	20°	η 100°	200°	258°	140	87.5	5 23	+10°	440	45	39
0.00 7.77 39.78	8.76 9.55 10.86	10.325 11.32 13.06	12.125 13.375 15.510	12.960 14.230 16.615	35 85 140	99.5 92 84	66	*10*	175 195	74.5 64	47.5 66
51.45 71.92 100.00	10.98 10.99 10.87	13.28 13.37 13.31	15,865 16,020 16,030	16.990 17.170 17.245	t	100%	98mo1%	P K	g no 1.%	90mo1%	85mo1%
Adzumi, 1	1937				-180 -170 -150 -130	-	210 160 100 63	560 280 170))	700 390	- - - 650
%	2 0°	ກ 60 °	100°		-100 -73 -45	-	45 36 34	12(85 7]	5 L	250 175 140	385 280 210
0.00 20.83 30.09 49.04 68.95	9.24 10.52 10.74 11.10 11.26 11.25	10.08 11.60 11.90 12.34 12.54 12.55	10.90 12.71 13.21 13.59 13.80		-45 -33 -18 +10 23 30	18 32 35 50	33.5 33.5 40 50	7(66 68 7(-) S	130 120 105 100	190 165 130 120
100.00	11.25	12,55	13.80		t	70mo19		P Kg 50mol%		crit.cu	rve
					-73 -45 -33 -18 +10 23 30	290 210 ~ (1	(14)* (20) (50) (05)	210 (10 -	·	- 630 450 210 105 50	
					=====	gures in	n brack	ets a	re dev	v point p	ressures.

TT	and Con	1031					70	93.3	89.0	cal curve 281	66.	
Trautz %	and 501	rg, 1931				i	96 111	90.0 87.8	80.0 75.6	352 400	59. 54.	6 43.1 4 40.0
, "	20°	100°	200°	250°			140 183 211	83.8 78.3	67.2 60.0 56.1	422 492 554	52. 44.	6 35.6
0.00 14.32 14.65	8.76 9.95 9.93	10.325 11.940 11.890 12.160	12.125 14.175 14.120 14.690	12.96 15.17 15.11 15.86			241	74.9 71.1	52.3	563	37. 37.	
49.10 55.00 100.00	9.88 9.775 9.09	12.100 12.030 11.420	14.665 14.085	15.83 15.26			William	s and Ka	atz, 1954	(fig.)		
							P Kg	mo1	•	P Kg	mol	r-
Adzum	i, 1937							L	V -18		L	<u>v</u>
%			τ,				175 280	99 98.5	- '`	490 700	98 97.5	-
	20°	40°	_ 60°	80°	100		280	90,3	-		97.5	-
0.00 16.31	9.24 10.13	9.65 10.71		10.48 11.83	10.9 12.4		28	99.5	-15 -	280	97	-
33,49	10.13 10.13 9.98	10.77 10.62	11.38 11.24	11.96 11.81	12.5	55	70	99	-	700	94	-
49.16 62.84 100.00	9.80 9.28	10.44 9.91	11.04	11.63 11.09	12.2 11.7	4 '1	28	99	-12	29° 420	92,5	
							70 210	$\frac{98.5}{95.5}$	-	700	89.5	-
. م <u>ر بن بن م</u> برها برموسره		. سے سے سے صدر سے سے سے سے							-10)1°		
Hydroge	n (H ₂)) + Propa	ne (C ₃ H ₈				14 28 140	98.5 95.5	1 0.5 0	350 700	90 83	0.2
Burriss	, Hsu ar	nd al., 1	953						-73	3°		
P Kg	m c	o1 %	РК	-	mol	% ∨	10 28 140	98,4 94	$\begin{array}{c} 1.5 \\ 1 \\ 0.5 \end{array}$	350 700	86.5 77	0.5 1.5
			4.5°						-45	; •		
25.89 45.45 68.93 114.25	96.22 94.90 91.28	11.86 8.67	251.0 288.4 329.0 424.3	19 78 10 10 69	.70 .92	6.46 6.62 6.56 6.88	14 35 140	98 92.5	7.5 3.5 1.5	350 70 0	83 71	1.5 2.5
181.76	86.56		507.0	0 64	.95	7.41	14		-18			
26.74 45.88 97.94	98.58 96.37 90.78	58.03 38.18 22.72	7.8° 315.4 368.9 436.6	5 54	.17	15.95 16.61	14 28 70 140	98 95 90.5	27.5 12 6 4.5	280 500 700	82.5 71 62	3.5 4.5 5.5
126.86 189.91	87.83 81.31	19.75 16.83	506.4 536.4	8 48	. 81 . 80 . 61	18.25 21.72 26.16			+10)°		
.,,,,		13.00	71°	42	.01	20.10	14 28	98	50 28	280 500	78 64	7.5
40.09 59.43	97.98		186.3	33 73	.42	40.48	140	88,5	9.5	700	53	8.5 10.5
82.04 119.82	94.70 91.10 84.79	52.20	197.3 228.1	6 63	.36 .39	40.56 44.88			+24			
153.70	79.22	40.92	232.3 37.8°	oz 60	.74	47.12	17.5 21 42 140	99 98.5 96.5 87	52 30 13	280 490 630	75 58 47	11 12.5 16.5
50.58 70.52 89.21	96.98 92.26 87.71		97.6 103.2 107.2	2 82	.80 .36 .31	71.15 71.58 73.29						
						/						

t	P Kg	t	P Kg	-					
	100			Klemeno	and Rem	i, 1923			
+ 10 + 38 + 65	5 10 25	+ 90 +100	35 45	%	n		n		
-184 -157 -129	99 mol 200 65 38	% - 18 + 10 + 38	16 15 20	0.00 3.13 7.85 8,91	8.66 8.99 9.39 9.50 9.70	0 51. 9 69. 0 80.	82 8.7 78 8.1 37 7.7	,	
-101 - 73 - 45	28 20 17 98 mol	+ 65 + 90	32 38	15,00 21,18	9:60 				
-184 -157 -129 -101 - 73 - 45	470 160 85 60	- 18 + 10 + 38 + 65	30 28 28 35		(H_2)		(C ₄ H ₁₀)		
- 45	50 36 96 mol	+ 90	40	P Kg	mol :		P Kg	mol ;	% V
-157	410	- 18	60				.9°		
-129 -101 - 73 - 45	195 120 95 75	+ 10 + 38 + 65 + 90	50 48 50 50	22.9 79.4 106.5	92.1 93.8 92.0	13.1 4.6 3.6	316.2 533.5	78.4 65.9	2.6 2.3
-157	94 mo	•				4.	4°		
-129 -101 - 73 - 45	700 310 195 145 110	- 18 + 10 + 38 + 65 + 90	90 75 68 60 58	21.9 55.7 168.1	98.4 96.4 88.9	6.9 3.3 1.7	298.5 552	81.8 69.8	1.6
-129 -101 - 73 - 45 - 18	90 mo: 630 350 260 190 150	+ 10 + 38 + 65 + 90	125 110 90 85	21.6 51.7 169.5 279.6	98.35 96 89.5 83.7	4.2 2.1 1.1 1.1	295 511.8 534 545	83.8 74 73.2 72.6	1.1 1.0 1.2 1.2
10			!	22.2	98.5	2.1	294	85.55	0.6
- 73 - 45 - 18	80 mo 590 425 320	+ 10 + 38 + 65	250 200 160	29.6 139	94.6 92.6	$\frac{1.0}{0.7}$	524 5.6°	77.1	0.5
- 45 - 18 + 10	70 mo 680 525 360	1 % + 38 + 65	300 220	28.2 56.2 143	98.3 97.0 93.0	0.8 0.6 0.4	267 450	88.1 82.0	$\substack{0.4\\0.3}$
	60 mo	1 «		22.5	00.7		3.3°		
+ 10 + 38	560 400	+ 65	260	23.5 56.6 102	98.7 97.6 96.0	0.2 0.2 0.2	198 287 492	92.9 90.4 75.1	$\begin{array}{c} 0.2 \\ 0.4 \\ 0.15 \end{array}$
+ 10 + 38	50 mol 690 (12) ^a 500 (30)		285 (70)	21.1 58.6 132	99.0 98.0 96.3	0 0 -	132 299 519	96.2 92.7 88.4	- 0 0
+ 38 + 65	critical 550 280	+ % 0 +100	85 45	38.4 144 292	99.0 97.0 95.0	-13 0 0	292 502	94.7 93.3	- 0
a) figures	s in brackets	are dew po	int pressures.						

						Hydre	ogen (H ₂) + Dode	anes (i	somers) (C ₁₂ H ₂₆)
Hydroge	en (H ₂) + Iso	butane ($C_{\mu}H$	10)			1 m 1	70.17			
Dean a	nd Tooke	1046					and Took				
P Kg		1 %	P Kg		1 %	PKg	m L	o1% V	P Kg	mo1% L	v
1 18		,	ı ng	L	V		<u>-</u>		3.3•		
	L	V	37.00			354.	0 74.6		142.3	87.60	0.071
		4 40	37.8°	01 01	r 22	283. 213.	3 78.5	.070	71.7 37.0	93.16 96.27	. 100 . 169
211 176	82.1 85.8	4.49 4.29	70	91,21 95.08	7.09	1 210.	. 00,1		49•	, - • • •	• == /
141	88.88	4.79		97.25	13.69	354.	0 70.1	0.348	142.3	85.30	0.480
211	80. 1	0.00	65.6°	01 51	12.2	283. 213.	3 75. 0 4 8 0. 0		71.7 37.0	$92.11 \\ 95.58$.773 1.320
211 176 141	80.3 83.1	9.82 12.1	70	91,53 93.24	17.6						
141	87.1	11.3	35	97.26	30.3						
211	75.3	42 5	93.3°	90.1	20.1	Hydros	zen (H2) + Ethyle	ene (C ₂	Н _и)	
211 176 141	75.3 80.8	43.5 24.2	106 106 70	89.1 92.91	28.1 38.5	1.5	,	•		•	
141	84.4	24.2	35 121°	97.75	59.3	Likhte	er and Til	khonovich	1939		
141 ^a	75.6	75.2	88	88.3	59.4	P	mol	%	P	mo1%	
106	83.8	57.6	70	91.80			L	V		L V	
a) sir	ngle phas	se regi	on .					_85°			
						2.64 14.4	$\frac{100}{99.3}$		12.7 97 52.2 96	7.25 14.3 5.4 9.8	
						29.5 33.4	98.3 97.8		79.0 94	i.8 7.0	
17 1	/ !!		3 4 Taimash1		(C II)	ľ	<i>,,</i> ,,,	_95°			
нуагод	en (H ₂) + 2,.	2,4_Trimethyl	pentane	(C ₈ n ₁₈)	1.59	100		35.2 98	3.1 7.2	_
Doom	nd Took	1046				11.0 17.6	99,2 98,97	14.8	46,1 97	7.68 8.1 7.4 7.8	
	nd Took,	1%	P Kg	mol:	<u> </u>	18.1 31.8	99.0 98.04	14.9 8.24	57.0 96 74.2 95	5.6 6.6 5.3 5.8	
P Kg	L	٧	r ng	L IIIOI	v V	İ		_105°			
		33	7.8°			0.93	100	100	34.8 98 41.9 97	3.45 5.3 7.78 6.6	
353.3	80.2	0.148	71.7	94.83 97.28	0.236	18.6 23.1	98,90 98,80 98,20	8.3	48.8 97	7.60 4.2 6.85 4.3	
281.9 212.7	83.4 86.8	. 160 . 162	12.3	97,28 99,10	0.398 1.050	32.6 34.3	98.60	6.9	90.1 90	J. 60 4, 0	'
142.0	90,29	. 169	3.3°					-115°			
355.4	74.2	0.64	106.9	90,26	1.12	0.49 10.0	100 99.65	9.4	41.2 98	8.57 4.2 8.08 3.6	
281.9 212.7	79.2 82.6	.70 .78	72.8 35.9	92.90 95.96	1.45 2.35	16.4 24.8	99.40 98.97	7.3 5.5 5.3	50.3 97 59.5 97 72.2 96	7.55 4.3 7.20 4.1	
145.5	87.0	.90	17.5	98, 35	5, 10	27.3	98,90	5.3	72,2 96	5,60 2,3	l .
256.3	64 5		0.30	97 10	4 80						
356.1 280.5	64.5 70.8	2.52 2.75 3.24	108.3 71.7 38.7	87.10 90.90 96.32	4.89 6.66						
212.7 143.8	76.2 83.3	3.99	13.0	98.78	10.31 31.03						
====	-										
					j						

P Kg	mo1%		P Kg	mol%		Edwa	rds and	Roseveare	e, 1942		
6	L	V		L	V	1	_			66:-:	
		- 157	7°			mo1%	•		irial coe units.104		
42	99	_	350	96	_	ļ		25		<u></u>	
120	98	-	700	94	-	4.0	17	20	_ 17.7		
17.5	99	-115 4	340	89	2 3	48.	17		-1/,/		
56 140	98 95	2 1.5	700	82	3		-				
140	70	-7	3°			Thom	sen, 191	1			
17.5	100	32	280	84 76	7.5	8	η	%		η	
50 140	9 7 91.5	14.5 8.5	430 7 00	76 56	9 12	l 		12.0 - 12	2.80		
			5,5°			0	9.15	37.0) 10	. 87	
14	99.8	_	210	83 76. 5	17.5 18	7.6 17.0	10.08 10.62	54.4	4 10	.78 .48	
21 28	99 98.5	52	280 420	62	22	28.0	10.86	100.0		. 16	
42 70	97.5 95	38.5 27	510	44	35	ļ ———					
		_ 3	31.5°			Traut	z and St	auf, 192	9		
21 50	100 97	52	210 330	7 9 63	28 32	76			'n		
85 140	94 87	40 29.5	365	46	44		-78°	_40°	- 1°	+20°	+55°
140	07		18°			100	7.18	8.18	9,43	10.12	11.22
28	100	_	1 7 5	80	42	81.87 80.82	7.31	8.39	9.59	10.39	11.54
70 115	94.5 89	56 44	230 250	68 56	44 56	70.33	7.54	8.52	9.85	10.53	11.64
fig.						51.73	-	8.62	9.98	10,67	11.73
t		P Ks				50.87 25.01	7.64 7.72	8.66	9.96	-	-
	.00% 98m	101%	9 5 mo1%	90mo1%		21.60 16.38	6.70	8.62	9.75	10.60	11.56
_ 157	_ 120	· · · · · · · · · · · · · · · · · · ·	500			0	0.70 +100°	7.40 +150°	8,30 +200°	8.73 +250°	9.43
- 137 - 129 - 101	_ 70)	230 130	415 260		100	12.64	14.08	15.47	16.81	
-7 3	_ ა		85 69	175 125		81.87 80.43	12.91	14.32	15.68	16.94	
-45 -18	28 42	?	70	105		72.01 70.33	12 08	14.41	15.74	16.99	
0 +10	_ 52 55 55	5	77 55	90 55		51.97	-	16.63	15.88	17.09	
8	35 mo 1% 70 r	no1%	50mo1%	crit, curve	•	51.73 21.14	12.78 10.30	14.09	15.29	16.27	
- 157		-	-	-		0	10.90	11.23	12,11	12.94	
	100	-	~ /14\+	-							
_45		0(18)	(14)* 490(34)	520		Korn	feld and	Hilferd	ing, 1931		
0 1	110 110		245(90) -	245 		%	thera	al condu	ctivity .	106	
+10 figures	in bracke	ts are	dew point	55 pressures.			· · · · · · · · · · · · · · · · · · ·	25°			
						0			437		
						13.51 38.90			329 206		
						48.63 68.60	}		169 114.8		
						83.02 100.00			86.1 52.7		
						1					

Hydrogen (H ₂) + Propylene (C ₃ H ₆)	Adzumi, 1932 and 1937
Williams and Katz, 1954	% п 100° 80° 60° 40°
P Kg mol%(L) P Kg mol%(L) P Kg mol% L V -156° -115° -73°	0.00 10.90 10.48 10.08 9.65 8.90 12.94 12.31 11.74 11.18 24.12 12.96 12.40 11.75 11.10
42 99.5 28 99 14 - 2.5 140 99 70 98.5 20 99 2.0 280 98 140 97 70 96.5 1.5 700 96 350 93.5 140 95 1.0	48.98 12.50 11.81 11.18 10.50 73.24 11.81 11.10 10.57 9.83 100.00 10.70 10.16 9.60 9.04
700 89.5 420 86.5 1.5 700 80.5 2.5	
PKg mol% PKg mol% L V L V	Trautz and Husseini, 1934
_45° _18°	% 7 20° 100° 200° 250°
14 99 8.5 17 99.0 22 70 97 3 70 96.5 7.5 140 93.5 2 140 91.5 5 280 87 2 280 83.5 4 700 73 2.5 500 73.5 5 700 65.0 6	100 8.44 10.76 13.39 14.67 92.68 8.58 10.90 13.53 14.77 83.18 8.75 11.09 13.73 14.94 76.30 8.87 11.22 13.88 15.09 64.70 9.10 11.45 14.10 15.29 48.50 9.49 11.81 14.40 15.68 36.30 9.80 12.01 14.53 15.80
17 99 51.5 25 98.5 54.5 42 97.5 24.5 42 97 35 70 94.5 16.5 105 91 17.5 140 89.5 11 210 82 13.5 350 74.5 9 350 70.5 12.5 500 65 10 420 64 13 700 54 13 630 48 20	25.10 9.95 12.15 14.53 15.66 17.20 9.94 12.05 14.38 15.41 10.70 9.82 11.73 13.95 14.96 0.00 8.76 10.31 12.01 12.96
t P Kg	Adzumi, 1937
100mo1% 98mo1% 96mo1% 94mo1% 90mo1%	% rate of molecular flow
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	(mm . cc) 20° 0.00 0.0750 24.82 .0610 49.18 .0458 100.00 .0164
88 60	Hydrogen ($\rm H_2$) + $\rm \beta$ -Butylene ($\rm C_uH_8$) Trautz and Husseini, 1934
88 60	% 7 20° 100° 200° 250°
	100 7.47 9.44 11.92 13.01 92.98 7.54 9.58 12.07 13.18 77.34 7.80 9.91 12.43 13.57 64.25 8.10 10.20 12.75 13.89 51.31 8.44 10.54 13.08 14.22 36.10 8.93 11.02 13.51 14.72 20.42 9.39 12.42 13.76 14.80 18.17 9.44 11.45 13.72 14.77 12.53 9.45 11.35 13.48 14.46 0.00 8.76 10.31 12.10 12.96
a 9	

Hydrogen (H_2) + Acetylene (C_2H_2)	Н	Hydrogen (H ₂) + Carbon	oxide (C	0)	
	s	Scott, 1929				
Adzumi, 1937	P	P	PV			
% rate of molecular flow		0%	33.7mo1%	48.3mo1%	66.9mol%	100mo1%
(mm . cc)			25		1 00155	1 00155
20 °	10	ō . 09 7 3	1.09155 .0955	1.09155 .0945	1.09155 .0926	1.09155 .0876
0.00 0.0750 24.31 .0622	20 30	0 .1103	. 1005 . 1056	.0980 .1022	.0942 .0965 .0992	.0846 .0823
48.82 .0490 74.03 .0354	40 50	0.11675	.1110 .1165	. 1065 . 1110	. 1023	.0806 .0797 .0790
100.00 .0220	60 70	0 .1300	.1223 .1280	.1155 .1203	. 1060 . 1095	.0790 .0794
	80	0 .1432	. 1343 . 1405	. 1257 . 1310	.1138 .1184	.0801 .0814
	100	0 .1563	. 1470 . 1537	. 1370 . 1430	1235 1293	.0836 .0867
Trautz and Narath, 1926	110	0 .1694	. 1604	. 1492 . 1555	.1350 .1411	.0906
% n % n	130	0 ,1826	. 1675 . 1746	11625	. 1474	.0997
15°	150 160	0 .1959	$.1820 \\ .1893$. 1690 . 1760	. 1540 . 1608	. 1050 . 1106
0 9.20 66.7 9.89	170	0 .2024	. 1915	. 1832	. 1677	.1165
25 9.43 75 10.02 33.3 9.55 100 10.24 50 9.71						
50 9.71	 	Townend and	Bhatt, 1931			
		P		P V		
	 	0%		49.8mo1%	66.7mo1%	100%
Adzumi, 1937		1 1.0000	1.0000 0°	1,0000	1.0000	1.0000
7 n	2	10 .0058 20 .0124	.0043 .0094	.0022 .0050	$0.9995 \\ 0.9992$	0.9938 .9880
100° 80° 60° 40° 20	(40 .0255 60 .0386	.0196 .0304	.0114 .0193	$1.0005 \\ .0038$.9786 .9728
$\begin{array}{cccccccccccccccccccccccccccccccccccc$. 24 110	80 .0520 00 .0654	.0418 .0540	.0275 .0377	.0091 .0165	.9703 .9710
22.12 13.46 12.78 12.19 11.04 11	.00 14	20 .0789 40 .0922	.0659 .0790	.0486	.0248 .0352	.9745 .9811
$\begin{bmatrix} 30.99 & 13.54 & 12.88 & 12.27 & 11.66 & 11 \\ 48.72 & 13.39 & 12.74 & 12.11 & 11.50 & 10 \end{bmatrix}$	86	60 .1060 80 .1196	.0918 .1055	.0733 .0870	.0468	.9900
1 70 20 13 12 12.45 11.84 11.22 19	20	00 .1332 50 ,1677	.1195 .1562	. 1016 . 1406	.0747	1.0013 .0152
100.00 12.71	30	00 .2025	. 1954 . 2360	. 1829	. 1152 . 1618	.0536
	40	50 .2377 00 .2732	.2781	.2280 .2743	.2121 .2644	. 1745 . 2423
	# 50	50 .3091 00 .3450	. 3214 . 3657	.3213 .3675	.3177 .3699	.3128 .3840
	55	50 .3816 00 .4183	.4102 .4550	.4142 .4620	.4209 .4725	.4532 .5242
	ľ	1 1.0915	1.0915 25°	_		.0915
		10 .0972 20 .1034	.0957 .1012	.0945	.0926	.0877 .0846
		40 .1162 60 .1292	.1120 .1235	. 1068	. 1002	.0806 .0792
	1 :	80 . 1423 00 . 1556	. 1354 . 1480	. 1268	. 1146	.0807
	1:	20 .1691	. 1609	. 1494	. 1239 . 1346	. 0838 . 0905
	10	40 .1827 60 .1965	.1746	. 1759	. 1462 . 1589	.0992 .1100
	20	80 .2105 00 .2245	.2029 .2176	. 1900 . 2049	. 1727 . 18 7 5	. 1230 . 1382
	30	50 .2600 00 .2960	. 2563 . 2968	. 2800	. 2278 . 2729	1820 2344
	40	50 .3320 00 .3686	.3388 .3820	. 3308	. 3214 .	2933 3565
	45 50	50 .4049 00 .4411	.4255 .4694	.4235	.4250 .	4239 4908
	5.5 60	50 ,4767	.5129 .5560	.4701 .5159 .5622	.5298 .	5580 6252

Verschoy l	le, 1931			<u> </u>	Crit	ical cons	stants	-			
t	p	t	р		t	P	%		P	%	
	100%				I	plait poi	int		contact		
-185.44 -188.06 -190.865 -192.07 -193.955 -196.55 -199.325 -202.27	1100.9 813.5 709.0 566.0 407.75 279.15 180.09		114.95 114.86 70.42 32.99 19.81 8.88 3.26 3.25		-185 -190 -200 -205	187 228 325 380	42 40 36 34		54 48 34 30	10 7 2.5 0.5	
- 204.96	110.03				Vapou	r phase					
%	P egin end	*	P begin	end	%	P		%	P		
		-185°					-210°				
100 90 75 60 50	- 2.13 - 46.8 - 111.4 - 163.7 - 183.6	3 40	7.7 1 12.3 1 - 1	87.0 81.9 62.5 22.7 59.5	3.69 3.47 3.12 2.97 2.20	176	.75 .41 .39 .76	2.58 1.24 0.82 0.88 0.78	79.80 65.74 32.03 21.85 16.8	{ } ;	
P	%	P		Z	1		-215°				
	L V		L	v	1.82 1.92	157	.37	$\substack{1.10 \\ 0.53}$	89.52 51.32	?	
181.3 166.7 128.2 128.1	54.6 29.6 59.0 22.9 69.7 15.2 69.6 -	55. 55. 31.	.4 87.4 .4 92.9	9.8 10.7 11.2	1.50 L +	V + C		5,2 to	205.5 atm	n206	.4
128.0 89.6 89.3	- 13.3 78.3 11.3 79.7 11.2	17. ? 2.	.2 96.4 .18 100.0	13.4 16.0 100.0	Trau	tz and B	aumann,	1929			
224.8 220.9 215.2	45.9 33.7 51.4 30.6 61.1 27.5	166 166 128	.8 67.1 .7 70.8 .1 75.1	15.7 16.0 11.1 11.2	%	-78°	- 38°	ղ 19°	100°	200°	250°
215,1 210.4 205.4 205.4 205.4 200.6 200.6 195.8 190.9 186.1 176.4	53.0 26.5 55.2 24.1 57.8 26.5 57.0 20.6 56.5 23.4 58.5 22.5 59.9 20.1 61.9 19.6 63.2 19.6 65.6 16.5	128 109 109 109 109 1889 1889 185 151 155 177 12	.1 74.6 .8 77.2 .8 79.0 .6 79.4 .3 83.0 .5 80.5 .2 87.5 .2 89.8 .2 97.3 .18 100.0	9.6 9.3 9.4 8.0 8.2 6.8	0 30.13 30.53 48.19 49.18 52.45 59.04 62.63 78.16 80.73	6.76 10.81 11.79 12.19	7.54 12.42 13.61 14.10	8.74 14.49 - 16.10 16.51	10, 30 16,72 19, 20 19, 71 20, 38 20, 85	12.12 20.16 22.30 	12.97 21.44 23.82 - 24.89 25.74 26.36
224.9 224.8 205.6 205.4 186.2 176.4 176.4 152.4 152.4 142.5 128.0	72.5 11.0 73.5 10.7 75.0 8.7 74.3 9.7 77.1 8.7 76.4 8.7 77.0 8.7 78.2 8.7 79.4 7.0 6.5 79.4 7.0	113 7 113 80 8 80 8 80 4 79 6 51 0 50 3 31 0 22 5 17 8 0	.2 87.3 .1 88.0 .7 - .0 91.6 .9 - .8 94.4 .5 -	4.1 3.6 3.7 3.3 3.0 2.5 4.6 3.3	Traut	12.64 zz and Lu	100°	n 20) 0 ° :	250°	20,00
215.16 190.97 152.33 152.17 118.38 118.29 79.89 79.86	83.4 4.5 79.8 6.0 81.2 6.1 83.7 5. 84.2 3.2 86.2 3.5 - 3.8 89.8 2.3	-205° 41 41 41 2 31 2 26 3 21	.26 - .67 95.1 .61 95.8 .69 96.7	1.5 1.5 1.3 1.4 2.4 1.8 2.1	5.15 10.94 16.63 23.27 42.51 73.46 91.58 100.00	8.74 10.43 11.90 12.90 13.90 15.70 17.00 17.37 17.45	10.30 12.33 13.92 15.34 16.38 18.46 20.20 20.73 20.85	14 16 17 19 21 23 24	4.40 15 5.25 17 7.78 19 7.19 26 1.73 25 3.84 25 4.48 26	2.97 5.60 7.71 9.21 9.62 3.34 5.49 5.22 5.36	

Van Itterbeek, Van Paemel and Van Lierde, 1947	Hydrogen ($\rm H_2$) + Carbon dioxide ($\rm CO_2$)
20.1° 0 8.84 38,6 15.62	t p_1 p_2 $2p_1 \sim p_2$ $(v=1)$ $(v=1/2)$
11.9 12.03 49.4 16.30 19.1 13.28 61.3 16.86	100 vol %
27.4 14.46 100.0 17.68	20.3 7615.79 15105.03 126.55 10.6 7289.12 14450.12 128.12 12.7 5719.60 11339.96 99.24 13.4 4706.59 9333.12 80.06 20.3 4351.34 8627.89 74.79 18.6 2921.78 5792.51 51.05 19.5 2845.84 5644.12 47.56 14.2 2478.01 4914.08 41.94 12.3 2063.71 4092.78 34.64 20.0 1889.24 3746.49 31.99 12.2 1563.07 3098.67 27.47 12.2 1114.50 2209.75 19.25
43.4 180 36.6 209 20.6 270 0.0 404	13.5

HYDROGEN + CARBON DIOXIDE

t p ₁ p ₂ 2p ₁ -p ₂	t	P1	p ₂	2p ₁ -p ₂
(v=1) (v=1/ ₂)		(v=1)	(v=1/2)	بيردني هن الله الله الله الله الله الله الله ا
84.22 vol \$\%\$ 15.4 8131.57 15622.67 640.47 15.6 8016.12 15404.27 626.97 15.6 7857.04 15109.96 604.12 15.3 7826.09 15054.35 599.63 15.6 7679.89 14781.20 578.58 15.7 7185.30 13856.59 514.01 15.7 6986.21 13486.92 484.40 16.1 6903.20 13335.22 471.18 16.4 6395.53 12395.55 395.51 16.3 6302.61 12224.44 380.78 16.6 6099.84 11845.57 354.11 16.8 5795.99 11275.63 316.35 16.8 5420.72 10565.46 275.98 15.9 4926.49 9632.45 220.53 16.5 4643.46 9089.28 197.64 16.3 4491.18 8796.94 185.42 16.5 4154.27 8147.10 161.44	17.3 16.3 16.1 16.3 16.3 16.5 16.8 16.9 17.0 17.1	2057.78 1960.76 1855.31 1821.68 1656.78 1568.96 1363.62 1223.24 1095.37 1075.42 993.63 883.93	4087.21 3895.29 3687.47 3621.25 3295.44 3121.53 2714.15 2436.85 2182.21 2142.49 1979.38 1761.89	28.35 26.23 23.15 22.11 18.12 16.39 13.09 10.83 8.53 8.7.88 5.97
16.5 4643.46 9089.28 197.64 16.3 4491.18 8796.94 185.42 16.5 4154.27 8147.10 161.44			75.53 vol %	
16.5 3918.20 7693.27 143.13 15.4 3852.65 7564.55 140.75 15.5 3705.46 7278.90 132.02 15.7 3099.35 6106.69 92.01 15.7 2929.85 5777.12 82.58 16.6 2727.33 5386.26 68.40 16.7 2588.54 5117.34 59.74 16.7 2403.48 4755.93 51.04 16.8 2229.77 4417.68 41.86 17.0 2125.63 4214.82 36.44 17.1 2027.35 4022.42 32.28 17.1 1973.88 3917.75 30.01 15.3 1616.73 3211.16 22.30 15.6 1538.34 3056.71 19.97 15.7 1486.25 2954.35 18.15 15.5 1358.72 2699.97 17.47 15.7 1296.24 2577.14 15.34 15.7 1211.36 2409.57 13.15 15.7 1140.92 2270.66 11.18 15.7 1080.19 2150.30 10.08 15.6 969.49 1930.64 8.37 15.7 922.91 1838.07 7.75	16.1 16.4 16.3 16.5 16.6 16.5	8073,01 7968,34 7844,74 7685,34 7007,96 6868,95 6378,96 5780,47 5883,90 5780,47 5399,67 4989,71 4651,61 4293,83 3958,38 3751,40 3695,23 3673,21 3611,22 3433,07 3219,58 3190,50	15681.80 15488.37 15258.44 14958.32 13674.89 13409.42 12474.01 11730.84 11523.00 11323.74 10588.75 9796.26 8446.38 7795.07 7392.38 7282.47 7239.53 6773.45 6358.53 6302.27	464.22 448.31 431.04 412.36 341.03 328.48 283.91 252.64 244.80 237.20 210.59 183.16 161.20 141.28 121.69 110.42 107.99 106.89 102.91 92.69 80.63 78.73
80.22 vol # 16.3 8028.61 15534.10 523.12	16.0 16.1	3067.01	6215.76 6061.98 5868 37	75.50 72.04 67.49
16.4 7974.72 15439.46 509.98 16.5 7896.44 15294.11 498.77 16.6 7858.78 15224.81 492.75 16.7 7749.29 15022.56 476.02 16.8 7579.92 14703.47 456.37 16.7 7028.28 13666.55 390.01 16.7 6945.34 13509.56 381.12 16.8 6816.59 13267.95 365.23 16.8 6460.75 12595.51 325.99 16.9 5911.22 11545.67 276.77 16.9 5390.42 10547.79 233.05 16.9 5048.51 9890.67 206.35 15.3 4898.11 9600.91 195:31 15.8 4515.78 8860.84 170.72 16.0 4351.48 8544.19 158.77 16.1 4314.68 8474.04 155.32 16.6 3868.37 7608.39 128.35 16.8 3778.24 7433.84 122.64 16.9 3722.77 7326.50 119.04 16.9 3626.08 7137.22 114.94 16.4 3447.52 6791.06 20.20	16.1 16.2 17.0 16.8 15.8 16.0 16.3 16.5 16.6 17.0 17.1 16.6 17.3 17.3 17.2 17.5 17.5	3145.63 3067.01 2967.93 2795.35 2735.41 2583.22 2583.22 2515.63 2379.27 2350.68 2267.53 2185.51 2071.89 2029.03 1911.36 1433.13 1324.80 1178.63 1186.93 1086.93 1037.32 940.31	8446.38 7799.07 7392.38 7282.47 7239.53 6773.45 6358.53 6302.27 6215.76 6061.98 5868.37 5532.61 5415.62 5117.82 4985.53 4718.37 4663.35 4499.40 4338.87 4115.43 4031.92 3800.33 3686.97 3183.10 2853.71 2638.71 2511.57 2348.60 2166.47 2068.60 2166.47 2068.60 2166.47 2068.60 2166.47	58, 09 55, 20 48, 62 45, 71 40, 17 38, 01 35, 66 32, 15 28, 35 26, 14 22, 39 19, 97 16, 52 12, 55 10, 89 9, 83 8, 66 7, 39 6, 04 5, 73
16.4 3259.26 6427.36 91.16 16.5 3189.27 6292.07 86.47 16.6 3055.96 6032.05 79.87 16.9 2940.38 5808.72 72.04 17.0 2836.01 5607.47 64.55 17.1 2648.82 5242.19 55.45 17.1 2501.25 4953.43 49.07 17.3 2302.58 4566.05 39.11 17.3 2174.86 4316.11 33.61 17.2 2121.52 4212.58 30.46				

$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	t p_1 p_2 $2p_1$ p_2 $(v=1)$ $(v=1/2)$
70.92 vol \$	
18.8 8273.52 16169.42 377.62 18.7 8031.93 15706.96 356.90 18.6 7286.53 15275.05 338.01 18.6 7286.72 14276.88 296.56 18.8 7153.94 14020.28 287.60 18.9 6716.25 13177.66 254.84 18.8 6323.09 12418.76 227.42 19.0 6188.74 12159.39 218.09 19.1 6119.47 12025.14 213.80 19.0 6014.74 11823.19 206.29 19.1 5783.35 11376.14 190.56 19.1 5424.11 10680.72 167.50 19.3 5234.15 10312.92 155.38 18.2 4799.99 9469.63 130.35	20.0 2255.46 4492.36 18.56 20.1 2039.52 4063.97 15.07 20.5 1902.95 3793.93 11.97 20.9 1787.58 3565.82 9.34 20.7 1611.76 3216.40 7.12 21.5 1539.34 3072.60 6.08 20.7 1488.97 2972.27 5.67 21.0 1230.99 2458.39 3.59 21.1 1144.99 2287.30 2.68 21.5 1057.42 2112.94 1.90
10,1 5783,35 11376,14 190,56 19,1 5424,11 10680,72 167,50 19,3 5234,15 10312,92 155,38 18,2 4799,99 9469,63 130,35 18,4 4489,84 8867,89 111,79	54.98 vol %
18.2 4799.99 9469.63 130.35 18.4 4489.84 8867.89 1111.79 18.6 4255.06 8800.64 109.48 18.6 4255.29 8414.47 98.11 18.8 3880.68 7678.42 82.94 18.6 3676.44 7278.36 74.52 18.6 3278.00 6495.74 60.26 18.8 3038.99 6028.02 49.96 19.0 2887.87 5729.64 46.10 18.7 2813.93 5583.83 44.03 19.0 2646.69 5255.25 38.13 18.9 2515.11 4998.02 32.20 19.5 2294.63 4563.09 26.17 17.4 2183.09 4341.59 24.59 18.1 2142.79 4262.45 23.13 18.5 2099.56 4177.41 21.71 18.5 1996.27 3973.86 18.68 18.9 1919.42 3820.91 17.93 19.7 1891.43 3766.77 16.09 19.7 1891.43 3766.77 16.09 19.7 1891.43 3766.77 16.09 19.9 1757.74 3501.51 13.97 19.9 1757.74 3501.51 13.97 19.9 1757.74 3501.51 13.97 19.9 1757.74 3501.51 13.97 19.9 1502.30 2996.65 8.05 19.5 1331.41 2656.01 6.81 20.0 1279.94 2553.95 5.93 20.1 1074.03 2143.28 4.78	17.9 7869.99 15557.07 182.91 18.1 7744.09 15315.06 173.12 18.2 7677.34 15185.40 169.28 18.4 7626.29 15087.10 165.48 18.6 7531.45 14903.10 159.80 18.9 7222.92 14300.42 145.42 18.7 6781.87 13435.54 128.20 18.8 6684.12 13244.26 124.58 18.8 6497.75 12878.08 117.42 19.1 6355.30 12597.61 112.99 19.0 6186.39 12266.62 106.16 19.1 5825.59 11558.74 92.44 19.2 5709.58 11332.28 86.88 19.1 5579.64 11077.20 82.08 19.2 5339.53 1065.65 73.41 19.4 45007.99 9953.06 62.92 19.2 4871.30 9684.53 58.07 19.3 4599.44 9147.15 51.73 19.4 4194.55 8346.09 43.01
62.50 vol % 21.6 8186.95 16094.86 279.04 21.2 8061.25 15857.41 265.09 21.4 7964.56 15672.57 256.55 21.7 7537.43 14850.95 223.91 21.3 7055.83 13920.64 191.02 21.1 6874.17 13568.09 180.21 20.9 6741.66 13310.02 173.30 20.9 6741.66 13310.02 173.30 20.9 6741.66 13310.02 173.30 20.9 6741.66 13310.02 173.30 20.9 6741.66 13310.02 173.30 20.9 5494.68 10874.77 135.05 20.8 5677.00 11231.93 122.07 20.9 5494.68 10874.73 114.63 20.9 5494.68 10874.73 114.63 20.9 5494.68 10874.73 114.63 20.9 5494.68 10874.73 114.63 20.9 5494.68 10874.73 114.63 20.9 4948.05 9804.89 91.21 20.8 4828.32 9570.18 86.46 22.1 4382.33 8694.57 70.09 21.2 4273.50 8479.91 67.09 21.2 4273.50 8479.91 67.09 21.2 4273.50 8479.91 67.09 21.2 4273.50 8479.91 67.09 21.2 4273.50 8479.91 67.09 21.9 33716.08 7382.03 50.13 19.5 3682.81 7315.93 49.69 19.6 3564.15 7082.18 46.12 19.7 3367.06 6692.89 41.23 19.6 3201.41 6366.69 36.13 20.2 3071.01 6108.04 33.98 20.0 2985.40 5938.95 31.85 19.8 2832.23 5635.65 28.81 20.3 2731.24 5435.57 26.91 20.1 2589.34 5154.75 23.93 20.1 2459.60 4896.99 22.21 19.9 2333.38 4646.71 20.05	19.5 3674.81 6126.04 23.58 19.5 2942.67 5863.28 22.06 19.6 2847.23 5673.87 20.59 19.7 2780.58 5541.85 19.31 19.6 2622.75 5227.82 17.68 19.7 2571.76 5126.91 16.61 19.9 2412.18 4810.38 13.98 20.2 2297.79 4582.25 13.33 20.3 2098.81 4186.78 10.84 20.2 1992.06 3974.24 9.88 20.1 1837.26 3666.54 7.98 18.9 1656.89 3307.76 6.02 18.9 1558.71 3113.04 4.38 19.1 1268.88 2535.64 2.12 19.3 1132.67 2263.46 1.88

HYDROGEN + CARBON DIXIDE

t p_1 p_2 $2p_1-p_2$ $(v=1)$ $(v=1/2)$	t p_1 p_2 $2p_1-p_2$ $(v=1)$ $(v=1/2)$
48.30 vol \$	
19.7 7914.28 15688.23 140.33 19.6 7335.91 14557.08 114.74 19.6 7251.78 14392.29 111.27 19.9 7165.88 14223.95 107.81 20.0 7005.03 13908.18 101.88 20.0 6775.24 13456.38 94.10 20.0 6700.19 13308.80 91.58 20.2 6523.43 12960.54 86.32 18.5 6165.44 12215.04 75.86 18.8 6051.91 12030.68 73.14 19.0 5996.01 11920.04 71.98 19.2 5794.31 11522.27 66.35 19.2 5631.85 11201.84 61.86 19.2 5381.51 107.66.98 56.04 19.4 5306.61 10559.31 53.91 19.4 5271.91 10490.10 53.72 19.7 5122.80 10194.33 51.27 19.5 4919.90 9790.98 48.82	20.0 2378.30 4747.82 8.78 20.1 2280.37 4552.69 8.05 20.8 2212.67 4417.38 7.96 20.4 2116.21 4225.11 7.31 20.2 2055.61 4104.79 6.43 20.4 1948.32 3890.63 6.01 20.5 1877.51 3749.90 5.12 20.3 1803.83 3603.21 4.45 20.5 1694.46 3384.99 3.93 20.6 1601.85 3200.62 3.08 19.9 1507.04 3011.98 1.05 20.1 1079.62 2158.79 0.45 20.3 1029.25 2058.20 0.30
19.4 5271.91 10490.10 53.72 19.7 5122.80 10194.33 51.27	38.34 vol %
20.2 6523.43 12960.54 86.32 18.5 6165.44 12215.04 75.86 18.8 6051.91 12030.68 73.14 19.0 5996.01 11920.04 71.98 19.2 5794.31 11522.27 66.35 10.2 5631.85 11201.84 61.86 19.2 5381.51 10706.98 56.04 19.4 5306.61 10559.31 53.91 19.4 5271.91 10490.10 53.72 19.7 5122.80 10194.33 51.27 19.7 5122.80 10194.33 51.27 19.7 4526.03 9010.14 41.92 19.8 4388.73 8738.74 38.72 20.2 4241.00 8445.12 36.88 20.1 3936.21 7839.49 32.93 18.4 3841.02 7651.26 30.78 18.1 3673.89 7319.75 28.03 18.6 3598.89 7319.75 28.03 389 18.9 32.9 38.0 38.0 38.0 38.0 38.0 38.0 38.0 38.0	19,9 8036,29 16052.10 20,48 20,1 7951.54 15885.53 17.55 20,1 7846.59 15678,07 15.11 20,2 7708.19 15404.35 12.03 20,1 7539.97 15071.29 8.65 20,1 77296.50 14588.28 4.72 20,2 7124.72 14245.55 3.89 20,3 6971.75 13941.16 2.34 20,2 6801.61 13601.19 2.03 20,7 6737.36 13472.74 1.98 20,5 6601.15 13200.37 1.84 19,8 6353.32 12704.80 1.61 20,0 6105.16 12208.71 1.53 20,2 5978.23 11954.93 1.33 20,4 5836.80 11672.27 1.21 20,3 5648.32 11295.43 1.19 20,3 5434.66 10868.13 1.14 20,6 5245.98 10490.82 1.09 20,6 5112.01 10222.93 1.07 20,7 5025.96 10050.85 1.04 20,7 5025.96 10050.85 1.04 20,7 4940.86 9880.68 1.01 21,1 4790.63 9580.25 0.99 21,2 4538.95 9076.91 0.94 19,4 4351.71 8702.48 0.89 19,9 4293.76 8586.63 0.83 19,5 4188.89 8376.95 0.77 19,6 3959.32 7917.87 0.68 19,6 3745.90 7491.12 0.63 20,1 3684.11 7367.59 0.59 20,0 3547.09 7093.59 0.47
43.34 vol %	19.6 3959.32 7917.87 0.68 19.6 3745.90 7491.12 0.63
20,7 8049.08 16040.64 57.52 20,6 7641.36 15238.29 44.43 20,8 7319.94 14601.86 38.02 20,9 6634.81 13241.77 27.85 21,3 6355.51 12686.07 24.95 20,9 6131.14 12238.54 23.74 21,1 5816.71 11611.36 22.06 21,1 5655.25 11288.57 21.93 21,6 5528.66 11035.68 21.64 19.6 5368.79 10716.51 21.07 19.9 5008.12 9996.23 20.01 20.0 4870.60 9721.22 19.98 20.2 4791.56 9563.24 19.88 20.4 4608.04 9196.84 19.24 19.8 4462.92 8906.74 19.10 19.8 4397.24 8776.15 18.33 19.9 4256.96 8495.92 18.00 20.0 4124.41 8230.98 17.84	19.6 3745.90 7491.12 0.63 20.1 3684.11 7367.59 0.59 20.0 3547.09 7093.59 0.47 19.4 3160.75 6321.03 0.39 19.8 3008.41 6016.43 0.23 19.8 2844.13 5688.03 0.14 19.9 2743.78 5487.42 0.08 20.1 2609.36 4946.22 0.01 20.2 2410.10 4820.19 - 20.9 2331.43 4662.86 - 20.3 2200.75 4401.50 - 20.4 1996.67 3993.34 - 20.8 1936.64 3873.28 - 20.4 1798.60 3597.20 - 20.6 1557.44 3114.88 - 20.6 1471.25 2942.50 - 20.8 1138.73 2277.46 - 20.8 1138.73 2277.46 - 20.9 1055.79 2111.58 -
19.9 3706.15 7396.38 15.92 20.0 3673.41 7331.26 15.56 19.5 3104.66 6197.06 12.26 19.6 3069.33 6126.68 11.98 19.6 2995.19 5978.47 11.91 19.7 2871.22 5730.60 11.84 20.0 2755.02 5499.33 10.71 19.8 2657.51 5304.99 10.03 20.0 2580.22 5150.47 9.97 20.0 2472.75 4935.80 9.70	

T t	p ₁	p ₂	2p ₁ -p ₂	t	P ₁	p ₂	2p ₁ -p ₂
	(v=1)	(v=1/2)	-ri re		(v=1)	(v=1/2)	
	27.	18 vol %	· · · · · · · · · · · · · · · · · · ·				
19.6 19.7 19.8 19.9 20.0 20.3 20.3 20.5 20.8 20.4 20.3	8148.07 7990.30 7990.53 7772.64 7607.467 7212.66 7100.68 7013.06 6888.83 6772.04 6573.45 6206.03	15851.02 15583.01 15251.13 14744.75	39.67 38.48 37.96 37.73 36.23 35.41 34.19 33.85 33.05 32.58 31.92	19.0 19.3 17.3 17.4 17.6 17.5 17.9 18.0 r8.0	2094,37 1776,38 1716,66 1599,18 1516,46 1442,72 1248,26 1180,76 1086,45	4192.68 3555.82 3436.21 3201.12 3035.65 2887.93 2498.60 2363.28 2174.43	3.94 3.06 2.89 2.76 2.73 2.49 2.08 1.76 1.53
20.4 18.6	6573.45 6206.03	13177.53 12439.96	30.63		0 vol	%	
18.9 19.2 19.4 19.4 19.3 18.5 19.9 18.9 19.4 19.6 18.9 19.1 19.2 19.2 19.3 19.6 19.6 19.8 19.8	5702,16 5440,82 5244,13 5089,21 4927,35 4686,56 4479,43 4361,43 3702,32 3702,32 3628,36 3167,18 3036,01 2254,29 2177,29 2034,08 1870,61 1638,99 1283,75 1243,15 1119,52		27.90 26.56 25.99 23.94 22.81 21.98 21.03 19.98 18.13 17.48 17.04 15.51 12.03 11.30 8.48 8.06 6.84 5.73 4.87 4.39 3.45 3.13 2.08 1.96 1.40 1.35 1.29	6.9 7.55 7.55 7.8 7.8 8.0 8.0 8.0 8.1 8.3 8.4 8.7 9.2 9.2 9.5 9.6	6850.35 6372.20 5934.30 5533.25 5171.45 4987.22 4682.48 4446.92 4207.16 3818.48 3659.48 3136.75 2980.58 2815.37 2681.50 2539.53 2419.87 2310.25 2200.19 2093.39 1996.03 1904.46 1827.44 1601.93 1541.50 1250.31 1210.14 1169.88	13713.25 12754.95 11872.09 11112.67 10350.76 9977.84 9376.81 8896.80 8421.00 7643.01 7324.52 6275.72 5963.39 5635.90 5364.98 5082.78 4843.20 4622.41 44403.32 4188.63 3993.86 3810.70 3657.13 3205.49 3084.85 2501.93 2421.70 2341.04	- 6.17 - 7.86 - 3.40 - 3.14 - 6.68 - 7.95 - 5.56 - 2.22 - 2.23 - 4.16 - 1.98 - 3.72 - 3.46 - 1.91 - 2.94 - 1.85 - 1.85 - 1.80 - 1.78 - 1.78 - 1.78
18.1 17.9 18.1 18.2 18.3 18.6 18.6 18.6 19.0 19.2 17.5 17.8 17.8 17.8 18.4 18.4 18.4 18.4 18.5 18.9	8131.01 7985.62 7767.17 7668.08 7533.33 7216.67 7111.82 6757.86 6415.72 6165.31 5942.71 5676.02 5358.15 5276.85 5029.64 4813.26 4512.46 4122.56 3880.19 3715.82 3637.85 3515.98 3037.09 2944.05 2673.42 2462.53 2376.75 2244.47	16330.42 16038.23 15598.94 15400.24 15129.55 16129.55 14283.30 13571.63 12884.56 12381.11 11933.85 11398.21 10759.68 10596.50 10098.77 9662.77 9057.15 8404.23 8272.15 7784.37 7453.09 7295.68 7049.57 6352.49 6085.93 5899.53 5897.84 5353.42 4930.30 4758.34	68.40 66.99 64.08 62.89 61.04 55.66 55.91 53.12 50.49 48.43 46.17 43.38 42.80 36.25 32.23 22.11 27.03 23.99 21.45 19.98 17.61 13.39 11.75 10.15 9.74 6.58 5.58				

Verschaffe v *	P P	9 and 1906 v *	P	3168 2975 2825 2667 2512	33.84 35.95 37.78 39.97 42.36	1889 1736 1624 1468	55.50 60.20 64.05 70.40 77.65	
*v = fract a = two p	ion of the vol	lume.		2355 2206 2045	45.07 47.97 51.55	1323 1172 1017 869.4	87.10 99.50 114.90	
	10.29	mol.%			64.72	mol %		
-4	17,1		50.5 0		16			
3234 2989 2840 2692 2532 2384 2217 2076	33.46 36.25 38.15 40.31 42.94 45.72 49.22 52.65	1906 1764 1635 1485 1336 1173 1028	58.50 62.25 67.40 74.55 83.15 95.20 109.50	2810 2585 2442 2299 2159 2014 1869 1724	34.44 37.17 39.15 41.38 43.77 46.54 49.70 53.35	1587 1480 1340 1207 1067 925.5 794.0 651.0	57.35 60.90 66.35 72.40 80.30 89.90 101.60 115.30	
	20.37	mol %		2810	36.85 31.	1587	61.80	
3293 2999 2723 2474 2253 2032 1840	18,3 32,61 35,81 39,47 43,49 47,78 53,00 58,60	1630 1484 1335 1212 1090 965.0	66.20 72.95 81.35 89.65 100.10 113.20	2585 2442 2299 2159 2014 1869 1724	39.80 41.96 44.38 46.95 49.99 53.45 57.40	1480 1340 1207 1067 925.5 794.0	65.75 71.75 78.45 87.25 98.30 112.0	
	35.55	mol %		80.10 mol \$				
2979 2746 2600 2446 2294 2143 1989 1836	16.3 34.85 37.76 39.90 42.35 45.10 48.21 51.90 56.05 35.82	1686 1576 1433 1284 1140 993.5 849.5	60.90 65.20 71.45 79.50 89.25 105.20 119.20	2960 2700 2423 2142 2031 1844 1653 1461 1276 1090 1051	15. 31.34 33.84 37.27 41.26 43.03 46.58 50.75 55.70 61.55 68.90 70.55	35° 1016 974.5 938.5 902.0 860.5a 827.5 786.0 712.5 518.0 455.2a	72.10 73.95 75.80 77.75 79.75 81.40 83.60 88.20 105.90 117.40	
2746 2600 2446 2294 2143 1989	38.79 41.00 43.53 46.34 49.60 53.35	1686 1576 1433 1284 1140 993.5	62.65 67.05 73.60 82.00 92.05 105.50	781.0 746.5 710.5 673.5	89.15 91.75 94.55 97.70	90° 633.5 ^a 596.5 557.5 521.0 ^a	101.5 105.1 109.6 114.2	
2979 2746 2600 2446 2294 2143	36.85 39.95 42.13 44.80 47.88 51.00	1836 1686 1576 1433 1284 1140	59.35 64.55 69.05 75.80 84:55 94.85	671.5 634.0 596.5 ^a	99.05 102.5 106.4 22.	558.5 524.0a 80° 902.5	110.9 115.4 82.45	
1989	54.95	993.5	108.9	1833 1651 1461	48.78 53.00 58.35	711.5 525.5 514.0	96.05 116.0 117.6	
	189	mol %		1316 1082	63.20 72.85	507.0 496.5	118.8 120.6	
3168 2975 2825 2667 2512 2355 2206 2045	32.11 34.09 35.78 37.85 40.08 42.60 45.34 48.71	1889 1736 1624 1468 1323 1172 1017 869.4	52.35 56.80 60.45 66.35 73.05 81.85 93.15	2018 1838 1651 1465 1275	47.00 50.90 55.50 61.15 68.20	.80° 1090 902.0 710.5 596.5	77.00 88.10 104.10 117.10	

	90.05 m	101 %		012.5	26.		
2774 2490 2199 2066 1874 1683	32.24 35.25 38.90 40.80 43.91 47.51	994.0 956.5 914.5 ^a 880.0 836.0 799.0	66.00 67.30 68.30 69.10 70.25 71.35	912.5 722.0 648.0 605.0 570.4 ^a 533.3 419.7	69.80 76.80 79.30 80.95 82.35 83.90 90.25	416.3 402.8 397.9 395.0 ^a 340.3 301.3	90.55 91.55 92.05 92.25 99.05 109.40
1490 1296 1106 1067	51.65 56.60 62.25 63.50	716.5 524.0 355.1 328.4a	74.00 84.20 106.3 113.6	571.0 534.5 ^a 420.5 406.3 402.8	27.10° (c \$2.70 84.20 90.65 91.85 92.20	399.2 396.3 392.8 391.5 371.6	92.45 92.60 93.00 93.20 95.10
2061 1877 1683 1480 1293 1110 914.5	42.20 45.40 49.26 53.90 59.10 65.15 72.55 24.20° (cr	718.5 649.5 595.5 532.5 526.0 417.1 361.2	81.60 85.05 87.80 91.95 92.45 104.10 114.60	2079 1688 1305 919.0 647.0 612.0	45.87 48.78 57.80 69.85 79.80	30° 452.3 ^a 425.5 421.9 419.7 410.5	88.95 90.55 90.85 91.05 91.65
914.5 724.5 670.0 647.0 612.0	73.45 82.50 85.40 86.65 88.60	490.2 456.6 417.1 390.4 382.1	97.45 101.10 106.30 110.80 112.20	570.0 533.0 ^a 494.6	81,25 83,05 84,55 86,50 27,50° (406.3 375.0 339.0 299.5	92.15 95.10 100.60 111.80
568.5 527.0 726.0 668.5 609.0 570.0 533.0a	91.60 94.30 25.0 83.25 86.40 89.95 92.60 95.35	373.8 ^a 0° 494.8 455.1 437.6 ^a 397.4	98.45 102.5 104.7 110.8	648.0 609.5 571.0 554.0 538.0 497.5 464.5	79.95 81.55 83.20 83.90 84.60 86.60 88.45	457.3 444.5 441.0 439.6 429.7 425.5	88.95 89.60 8 9.30 89.95 90.55 90.85
668.5 607.0 491.8	25.45° (c 86.85 90.50 99.45	458.0 419.6 377.6	102.90 108.20 115.30	457.3 418.4 378.8	89.35 92.05 96.00	331.9 305.1 295.2	103.4 111.2 115.5
2069 1873 1685 1486 1300 1107	42.82 46.27 50.20 54.90 60.25 66.85	918.5 724.0 530.0 456.6 380.6	74.50 84.20 96.90 103.90 115.80	2074 1880 1686 1494 1302 1106	32. 42.98 46.36 50.25 54.65 59.90 66.05	10° 919.0 723.5 531.0 419.0 337.7	72.95 81.35 90.90 99.40 111.90
2052 1870 1675 1479	32.3 44.58 47.93 52.20 57.15	1109 914.5 722.0 525.5	69.95 78.60 89.70 105.4		100) %	
1297	62.85 95.06 m	424.9	118.1	2618 2406 2131 1859	31.69 33.65 36.77	30° 1471 1337 1226 1196a	46.04 48.30 50.05 50.60
2749 2171 2074 1688 1302 1187 1152 1110 ^a 1074 2071 1880 1691 1495 1302 1112 919.0 845.0 ^a	31.41 34.19 39.12 45.08 52.75 55.35 56.25 57.20 57.55 40.63 43.56 46.97 50.90 55.45 60.40 65.95	918.0 724.0 527.5 353.9 254.3 ^a 250.0 247.1 242.8	59.25 62.15 67.75 80.55 102.90 108.10 111.30 117.00 70.30 76.00 88.00 102.90 105.20 107.70	2864 2420 2120 1854 1582 1459 1335 1192	32.34 36.96 40.86 44.96 50.00 52.50 55.55 59.05	00° 1037 924.1 786.8 728.6 662.9 629.5 599.2	63.20 66.15 69.75 71.10 72.50 73.15 73.60

v liq. 90.05 mo	v 1 %	v liq.	-
16 00			-
3.7		55 7	
12.2	524.0	106.3	- 11
23.8	535.1	184.1	ij
32.2	0		- II
	410.7	1 20 1	-
	361 2		- 11
	001.2	201,4	-
24 20° (cri:	tical)		- 11
	373.8	162.9	- 11
	0		H
		58.9	:
15.3	423.8		
35.2	417.1		-
50.9	412.9	24.0	H
55.1	412.6	0.0	li
58.8			∦
95,06 mo	1 %		
	0		- 11
	527.5		- 11
5.6	353.9		- 11
}0.0 ₹7.5	254.3	254.3	- 11
	0		Н
		123.1	l
44.6	366.0	211.5	J
26.80		1.50 -	
7.6			- 1
	402.8		- 11
		193.6	li
27.10° (cri	tical)		ii
39.3	406.3	148.6	- H
96.6			-
27.30	0		
5.7	433.1	87.7	- 11
37.6		64.4	- 11
64.4		47.4	-
/5.8 70.0	428.3	43.8	ı
79.9 78.6	429.7 425.5	38.3 10.0	
		19.0	-
	v	P	H
ginn.	end		
95,06ma	1%		-1
11 57.20	254.3	102.9	-
54.5 67.90	289.2	100.0	-
85.0 81.75	383.3	93.20	
62.5 83.00	406.3	91,85	
40.0 84.60	427.0	91.50	I
		87.40	- 11
90,05mo	1%		
44.0 67.80	-	-	H
89.0 83.20	2 7 720	114 2	H
∡5.5 87.90 65.0 02.00	0/0.8 1 412		I
47.0 101			H
		101.0	
80.10mo			l
70 5 70 10			II.
8 79. 5 79. 10	,		- 11
379.5 79.10 33.5 101.5 60 110.9			
	,		
	16.90 3.7 12.2 23.8 32.2 8.0 19.4 72.7 24.20° (cri: 46.0 18.1 25.00 3.5.3 35.2 55.6 5.6 5.6 38.8 95.06 mo 15.30 1.5 5.6 38.8 87.5 21.50 2.1 44.6 26.80 7.6 36.9 52.2 27.10° (cri: 39.3 96.6 27.30 39.3 96.6 27.30 39.3 96.6 27.30 39.3 96.6 40.0 87.40 90.05ma 48.0 87.40	12.2 524.0 23.8 535.1 32.2 22.80° 419.6 19.4 361.2 272.7 24.20° (critical) 46.0 373.8 18.1 25.00° 373.8 18.1 25.00° 412.6 55.8 417.1 50.9 412.6 55.8 412.6 55.8 254.3 37.5 21.50° 527.5 5.6 353.9 38.8 254.3 37.5 21.50° 27.10° (critical) 39.3 402.8 52.2 397.9 27.10° (critical) 39.3 406.3 96.6 27.30° 57.5 433.1 36.6 429.8 644.4 431.8 475.8 428.3 376.6 429.8 644.4 431.8 475.8 428.3 79.9 429.7 78.6 429.7 78.6 429.7 78.6 429.7 78.6 429.7 78.6 429.7 82.5 50.0 80.7 80.0 406.3 400.0 84.0 87.40 48.0 90.05mol% 65.0 92.90 412 47.0 101 47	16.90° 3.7 716.5 55.7 12.2 524.0 106.3 23.8 535.1 184.1 22.80° 8.0 419.6 138.1 19.4 361.2 201.4 72.7 24.20° (critical) 46.0 373.8 162.9 18.1 25.00° 3.7 424.9 58.9 15.3 423.8 53.0 35.2 417.1 43.3 35.2 417.1 43.3 50.9 412.9 24.0 58.8 95.06 mol \$\frac{1}{8}\$ 15.30° 1.5 55.6 353.9 209.3 38.8 254.3 254.3 37.5 21.50° 2.1 528.5 123.1 44.6 366.0 211.5 26.80° 21.50° 2.1 528.5 123.1 44.6 366.0 211.5 7.6 416.3 158.5 36.9 402.8 179.8 52.2 397.9 193.6 27.10° (critical) 39.3 406.3 148.6 96.6 27.30° 5.7 433.1 87.7 37.6 429.8 64.4 46.4 431.8 47.4 75.8 428.3 43.8 77.9 429.7 38.3 39.6 429.7 38.3 39.6 429.7 38.3 78.6 429.7 38.3 78.6 429.7 38.3 78.6 429.7 38.3 78.6 429.7 38.3 78.6 429.7 38.3 78.6 429.7 38.3 99.0 429.7 38.3 91.85 40.0 83.00 406.3 91.85 40.0 84.60 427.0 91.50 48.0 67.80 48.0 87.40 90.05mol \$\frac{1}{8}\$ 44.0 68.3 20 25.5 87.90 373.8 114.2 656.0 92.90 412 108.4 47.0 101 47 101.0

Van It	terbeek	and de Clip	ppeleir, 1946	
%	t	p	(ε-1).10 ⁶	
100 95.568 89.128 69.987 48.018	0.34 .24 .21 .48 .43	769 767 765 759 769	1008 877 823 635 420 271	
96.419 91.600 84.250 55.455	0.47 .39 .21 .47	782 750 762 770	840 808 718 416	
100 99.486 99.092 98.705	20.08 18.08 20.08 14.67	774 778 771 772	948 960 943 962	
98:431 96:447 90:674 85:098 80:160 64:490	14.64 17.26 16.72 17.96 16.58 17.04 20.08	765 761 772 765 765 763 772	939 868 795 663 636 487 258	

P	mo 1%	P	mo1%	
	_ 8	330		
		+ V		
5.32	12.8	43.9	2.0 3	
5.32	12.8		2.02	
5.6	$\bar{1}3.1$	60.6	1.69	
5.6	12.3		1.60	
10.2	6.97	76.5	1.37	
10.2	6.93	, 0, 0	i. 34	
15.6	4.84	99.7	1.17	
10.0	4.78	101.0	î. 16	
27.3	2.88	101.0	1.17	
27.0	2.89	111 /		
0 < 0		111.6	1.10	
36.3	2.38		1.15	

Deutsch, 1907	,			Heath,	1953 (fig	.)	
mo 1%		/sec.)		%	η	%	η
15°		·				18°	
25 50 75	0.592 .604 .631			100 80 60 50 40	14.6 14.7 14.7 14.6 14.2	30 20 10 0	13.8 13.1 11.6 8.8
Puluj, 1879				Weber,	1918		
vol% t	η	vol% t	n	vo1%	h, 10 ⁶	vol%	h. 106
100.0 19.1 45.6 19.1 20.7 20.0 0.94 19. 0.42 18.	5 15.0 5 13.8 2 12.1	.09 20 .04 19 .02 19	.7 9.8 .7 9.4 .7 9.2 .9 9.2 .3 9.1	100 92.47 90.60 82.99 63.02	33.93 44.77 47.66 60.73 103.40	0° 39.32 16.55 5.71 0	172, 35 279, 90 359, 00 416, 30
Breitenbach,	1899						Tierent
%	η	%	m,	Ibbs a	nd Hirst,	1929	
15.0°	99.2°	15.		%	h. 106	%	h. 106
0 8.93 2.76 9.91 17.80 12.89 51.56 14.85	11.95	84.73 - 87.02 14. 00 14.		100.0 95.1 90.0 85.8	36 44 51 57	0° 50.0 25.0 9.9 5.0	135 227 315 355
Theres: 1011				75.0 64.5	77 100	0.0 tivity coef	404
Thomsen, 1911	%	<u> </u>					
- % n		<u>π</u>		Kornfel	d and Hilf	erding, 193	1
100 14.6		14 50		mo 1%	h . 106	mo1%	h .106
100 14.6 91.5 14.8 82.8 14.9 77.6 14.9 74.1 14.9 44.6 14.8	30 23.5 00 17.8 35 12.1 38 0.0	14.50 13.67 12.92 12.01 9.11		0 3.62 9.41 50.40 h = h	437 402 350 151.3 eat conduc	80.70 95.30 100.00 tivity coeff	75.8 44.3 40.8 ficient
Trautz and Na				Kudryas	svtsev, 194	47	
- % n	% 15°	η		Sound	absorption	coefficient	
0 9,27 25 9,67 33,3 10,16 50 10,86	7 75) 100	11.80 12.78 14.68		% 100 80	a (cm ⁻¹) 179 1.95		a (cm ⁻¹) Iz 1.3 .35
				60	.45	0	.8

Hydrog	gen (H) + Et	her (C ₄	H ₁₀ 0)			Heli	um (He) + Prop	ane (C	зн _в)		
Trauta	z and Lu	dewigs	, 1929				Tsik	lis, 195	55 (fig.)			
	%		t		'n		P Kg		%		P Kg"		%
	26.08		12.6		8.96		 	L	1 L ₂			L ₁	L ₂
	26.37 26.35		$\substack{13.3\\14.8}$		8.94 8.99			_		105°			
	26.35 26.54		$100.6 \\ 100.5$		11.26 11.19		200 300	55 3 21 1	5 55 8 67		2000 3000	5 3	55 57
	26.54 26.57		149.3 149.8		12.52 12.46		1000	2: 1:	5 62 5 48		4000 5000	2 1	57 57
	26.52 26.62		$\frac{212.9}{213.0}$		13.90 13.86					110°			
	13.27 13.27		13.6 14.7		9.33 9.37		300	50	50		3000	5	54
	13.27 13.27		15.0 100.5		9.37 11.46		1000	2. 1	8 46		4000 5000	4 2	54 54
	13.39		100.4 149.7		11.48 12.61		2000	,	8 52				
	13.27 13.39 13.39		150.4 213.0		12.63 14.02		700			115°			
							700 1000	3′ 24	4 38		3000 4000	6 5	51 52 52
							1300 2000	11	8 41 1 47		5000	4	52
										120°			ļ
Hydroge	en (H ₂) + Me	thyl alc	ohol (CH ₄ 0)		1300	30	30		4000	6	48
							2000 3000	1.	3 45 8 48		5000	4	48
Michels							 -			130°			
P	mol V	% L		P	mol V	% L	2050	31	31		4000	8 7	45
			24.4°				3000 3800	10) 44 8 45		5000	7	45
150		2.53	24.7	500	_	7.26				150°			
150 300	-	4.75 5.94		600 800	-	7.26 8.31 10.58	3800	30			5000	8	43
400	-	3.94	49.4°	000		10.00	4000	18	3 38				
200		F 10	47.4	800	_	12.24							
300 500	-	5.19 7.98		800		12.27							
			75.0°				Heli	um (He) + Ethy	lene (C ₂ H _h)		
84	1.99	1.84		400	0.69	- 9,17					, ,		ŀ
121 150	1.55	2.56		500 600 800	0.62 0.61	13.86	Tsik	lis, 195	53 (fig.	.)			
250 300	0.95	5.87		800	0.01	13.00	vo1%			P K	 Сg		
			99.3°				 	16°	2 5°	50°	75∘	100°	150°
100 120	3.96 3.54	-		300 400	1.79 1.53	6.53	5	1900	2100	3700	5400	7000	-
150 200	2.66 2.37	-		500 600	1.29	10.46	10 20	1300 900	1 7 50 1 <u>10</u> 0	2500 1800	3750 3600	5500 5200	9100 8800
250 250	2.10	-		800	1.08	15.66	40 50	450 400	550 500 200 0	1900 2550	4000 5000	6000 7750	9550 -
							60	250 850	2000	5000	7000	10000	-
							70 	400 3 75 0	6600	-	-	-	-
							75	8000	-	-	- 		

В				HELIUM -	+
Helium	(He) + 1	Propylene	(C ₃ H ₆)		
Trautz	and Husse	ini, 1934			_
mo 1%		τ	ו		
	20°	100°	200°	300°	_
100 78.7 60.5 43.4 33.1 12.4 0.0	8.44 9.53 10.63 11.99 13.11 16.56 19.43	10.76 11.84 12.96 14.52 15.79 19.58 22.85	13.39 14.56 15.70 17.46 18.75 22.91 26.74	14.67 15.74 16.95 18.77 20.15 24.50 28.57	
Helium	(He) + ß	Butylene	: (С ₄ Н ₈)		
	(He) + f	·	· (C ₄ H ₈)		
		ini, 1934			
Trautz		·		300°	
Trautz	and Husse	ini, 1934 η		300° 13,01 14,34 15,54 17,39 18,43 21,75 28,57	-
Trautz mo1% 100 75.4 60.6 43.7 35.8 19.2	20° 7.47 8.43 9.33 10.73 11.50 14.00	100° 9.44 10.64 11.55 13.08 14.02 16.85	200° 11.92 13.17 14.18 15.84 16.93	13.01 14.34 15.54 17.39 18.43 21.75	
Trautz mol% 100 75.4 60.6 43.7 35.8 19.2 0.0	20° 7.47 8.43 9.33 10.73 11.50 14.00 19.43	100° 9.44 10.64 11.55 13.08 14.02 16.85 22.85	200° 11.92 13.17 14.18 15.84 16.93	13.01 14.34 15.54 17.39 18.43 21.75 28.57	

%	t	р	(æ-1). 106
100	0.34	769	1008
93.342	0.47	751	878
86.658	0.39	759	801
73.988	0,21	757	653
55.653	0.47	763	490
100	20.08	774	948
98.871	26.33	753	933
97.147	26.70	771	911
94.474	26.48	760	875
91.436	26.58	759	831
83.748	26.28	763	761
80.900	26.28	754	720
60.375	25.47	747	517
93,447	39.72	763	885
87.088	39.58	759	724
80.159	39.32	772	653
61.972	38.99	781	506

				, <u>.</u>				
Ewald,								
P	mol %	P	mol %	P	mol %			
	1.1	-8		45 4	1.60			
4.7 4.7	14.1 14.0	12.36 12.36	5.62 5.58	45.4 45.4	1.58			
4.7	14.8 13.9	12.36 13.2 13.2	5.30 5.36	62.3 62.3	$\frac{1.20}{1.19}$			
4.9	14.0	21.1	3.38	83 27	0.903			
4.9 5.0 5.29	$\frac{13.6}{12.4}$	21.1 25.1	3.41 2.81	83.27 100.5	$0.905 \\ 0.784$			
5.29 8.8	12.4	25.1 41.4	$\frac{2.80}{1.77}$	100.5 142.5	0.793 0.583			
8.8	7.74 7.96	41.4	1.78	142.5 142.5	$\substack{0.583\\0.576}$			
Pfeffe	rle, Jr.,	Goff an	d Miller,	1955				
compre	ssibility	constan	ts at 30°	= Z				
mo 1%	B. 101				06 d.109			
	(atm ⁻) (atm	2) (atm	1) (atm	-2) (atm ⁻³)			
100	-47.53		56 -47.5					
96.4 71.7	83 -43,83 41 -21,00	1 -12.6 5 -0.5	08 -43.8 238 -21.0	31 -2. 36 +1.	49 +7. 4 98 -			
49.4 19.7	746.49	96 +1.	570 - 294	-	· -			
5.1	72 +4.7	69 +0,1	099 -	-	-			
0	+4.7		or mixture	e rich i	n COo :			
Z = 1	+ Bp + Cp - b /PT/v)) 2 and 10	or mixture	(RT/v)3	n cog .			
111 2	$\ln Z = b (RT/v) + c (RT/v)^2 + d (RT/v)^3$							
Edward	is and Ros							
mo:	1 % F	3 ₁₂ = Sec	ond viria Amagat uni	ts . 10 ⁴	cient)			
48 1	7 (?)	25°	-16,	L				
Cottr	ell and H	amilton,	1956					
t		Second	virial co	efficient	(cc/mol)			
30	50 1	mol %	-16.	ī				
60			- 8.7	7				
90			_ 5.0					
Heath	, 1953 (fig.)						
%		η	%		η			
			18°					
100 80		14.6 15.2	40 20		17.4 18.9			
60		15.2 16.0	0		19.0			

Argon (A) + Methane (CH ₁₄)	Argon (A) + Benzene (C ₆ H ₆)
Schröder, 1937 (fig.)	Bennett and Vines, 1955 (fig.)
% f.t. m.t. % f.t. m.t.	mo 1% h . 106
100 _183 - 40 -198.5 -203.5	78.0° 100.6° 125.0°
80 -189.5 -194 20 -193.0 -197.0 60 -197 -202 0 -189.5 -	0 48.2 50.6 54.2
51 -205 -205	25 41.8 45.4 49.6 50 38.0 42.4 47.2
	75 35.7 40.6 45.9
	100 34.3 39.6 45.3 h = heat conductivity coefficient
Fedorova, 1939	(cal cm ⁻¹ sec ⁻¹ deg ⁻¹)
% f.t. E % f.t. E	
100 _183.2 _183.2 50 _198.6 _202.2	به الدين الله المواقع الله المواقع الله المواقع الله المواقع الله المواقع الله المواقع الله المواقع ال
85 _ 186.8 _ 192.1	
70 _192.2 _201.2	Argon (A) + Perfluoro-n-pentane (C_5F_{12})
57 -197.0 -202.2 0 -189.1 -189.1	
	Newcome and Cady, 1956
Masson and Dolley, 1923	mol% p (Dew point)
P Dv%	25°
vol% 24.7 49.95 59.85 70.72 90.06	100.0 646.6 76.2 868.0
24.95°	57.6 1153.0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
50 5.0 8.4 9.1 9.35 5.35	
1 70 10 75 71 5 75 1 78 1 22 0 1	Argon (A) + Carbon dioxide (CO_2)
75 11.65 23.8 28.0 31.5 24.65 80 11.75 24.0 28.0 31.3 21.3	Aigon (A) - Carbon dioxide (Co ₂)
$\begin{bmatrix} 90 & 11.10 & 21.6 & 24.5 & 25.5 & 11.1 \\ 100 & 9.9 & 17.95 & 19.0 & 18.2 & 3.7 \end{bmatrix}$	Kapp, 1907
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	% d U (ratio)* % d U (ratio)*
125 6.9 9.35 7.7 4.55 -2.65	00
* the \$ are calc. in volume at 1 atm.	100 0.001965 1.2960 42.31 0.001857 1.4395
	95.43 .001956 .3039 40.23 .001854 .4535 90.83 .001947 .3086 36.18 .001847 .4608
	90.83 .001947 .3125 32.06 .001840 .4798 87.94 .001942 .3125 27.82 .001832 .4926
Argon (A) + Ethylene (C ₂ H ₄)	85.23 .001936 .3246 25.79 .001829 .5063
200, 2000 (02.04)	81.45 .001929 .3322 21.53 .001822 .5277 75.80 .001918 .3381 17.30 .001815 .5555 72.87 .001913 .3448 13.05 .001807 .5649
Jackson, 1956	68.06 .001904 .3636 10.86 .001804 .5865 64.23 .001897 .3773 8.76 .001800 .5970
14	60.31 .001890 .3845 6.57 .001797 .6119
mo1% η mo1% η	52.40 .001875 .4082 2.12 .001790 .6289
25°	48.39 .001868 .4264 0.00 .001786 .6501
0.0 22.52 60.0 14.70 10.0 21.11 70.0 13.50	• U at const. press. / U at const. vol.
20.0 19.63 80.0 12.42 30.0 18.27 90.0 11.36 40.0 16.98 100.0 10.42	
40.0 16.98 100.0 10.42 50.0 15.80	

Argon (A) + Methyl alcohol (CH ₁ 0)	Krypton (Kr) + Carbon tetrafluoride ($CF_{\mathtt{l}_{\mathtt{l}}}$)
Bennett and Vines,1955 (fig.)	Thorp and Scott, 1956 (fig.)
mo 1% h . 10 ⁶	mol% p mol% p
78° 100°	_156,1°
0 48.5 51.0	0 590 60 450
25 50.0 53.4	20 550 80 305
50 49.4 53.6 75 48.2 53.0	40 510 100 75
75 48.2 53.0 100 46.7 52.2	
h = heat conductivity coefficient	
	Chlorine (Cl ₂) + Toluene (C ₇ H ₈)
Krypton (Kr) + Methane ($CH_{i_{+}}$)	Maass and Mc Intosh, 1912
	% f.t. % f.t.
Thorp and Scott, 1956 (fig.)	0.0 -101.5 53.1 -98.0
mol% p mol% p	4.7 -105.5 57.9 -98.5
	9.0 -107.0 64.1 -100.0 14.7 -110.5 72.7 -106.0
_ 157.7°	17.9 -112.0 77.5 -109.0
0 505 60 840 20 640 80 920	22.9 -108.0 80.3 -112.0 26.9 -106.0 84.2 -112.5
40 760 100 990	32.8 -102.0 87.4 -114.0
	40.3 -101.5 90.7 -103.5 44.3 -102.5 96.0 -100.0
	49.2 -99.5 100.0 -94.0
Veith and Schröder, 1937 (fig.)	(1+1)
% f.t. m.t. % f.t. m.t.	
100 -183 - 40 -165.5 -170	Chlorine (Cl_2) + Carbon tetrachloride (CCl_n)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	chrotine (C1 ₂) + Carbon tetrachroride (CC1 ₄)
	Biltz and Meinecke, 1923
	mol% f.t. E
Eucken and Veith, 1936	I II
t U (cal/mole)	100
0% 15.6% 32.21% 50.22% 71.94% 100%*	100 -22.5 -47 - 94.27 -34.0 -49 -
_263	91.9 -37.5 -46 -
263	88.0 _45.0 _48 _
-260.5 2.07 2.55 2.63 2.53 2.40 1.50 -258 2.72 3.60 3.07 3.00 2.93 2.47 -255.5 3.23 3.70 3.52 3.46 3.46 -	85.5
1_253	79.2 -52.0115
248 4.44 4.74 4.73 4.71 4.67 4.96 243 4.96 5.56 5.45 5.35 5.20 5.74	76.4
-238 5.32 6.20 6.03 5.81 5.62 6.38	74.1 -55.5115
-233	69.5 -57.5114 66.1 -63.0114
1_223 6.00 7.44 7.21 6.88 6.45 7.84 1	58.1 -69.0115
1_213	49.2 -79.0115 39.8 -93.0115
$\begin{bmatrix} 208 & 6.45 & 8.34 & 7.96 & 7.44 & 7.00 & 8.84 \\ -203 & 6.61 & 8.65 & 8.23 & 7.69 & 7.16 & 9.13 \end{bmatrix}$	33.0 -102.0114.5
-198	23,3 114 10.1 -106.0 115
-193 6.97 9.25 8.71 8.13 7.58 9.73	0.0 _102.5
* data taken from Clusius	
,	

	Chlorine ($C1_2$) + Acetone (C_3H_60)
Wheat and Browne, 1938	Maass and Mc Intosh, 1912
mol % f.t. mol % f.t.	% f.t. % f.t.
100	0.0 -101.5
Chlorine (Cl_2) + Carbon dioxide (CO_2)	44.5 -81.4 (1+2) (3+2)
Thiel and Schulte, 1920 p t mol%	Chlorine (Cl_2) + Ethyl acetate ($C_4H_8O_2$)
L V	Managa and Ma Treach, 1019
750 -79.43 17.5 93.2	Maass and Mc Intosh, 1912 ### f.t. ### f.t.
Chlorine (Cl_2) + Ether ($\text{C}_4\text{H}_{10}\text{O}$) Mc Intosh, 1911 f.t. f.t. f.t. f.t. 100 -118 65.2 -55 20.0 - 74 97 -99 55.7 -50 15.4 - 85 95 - 89 53.5 -49 13.4 - 95 90.5 - 80 42.7 -53 11.4 - 97 81.7 -71 35.9 -55 6.8 -103 80.8 -70 28.7 -60 2.2 -101.5 76.2 - 65 26.8 -63 0.0 -101.5	0.0 -101.5 39.1 -68.2 1.0 101.5 50.8 70.0 2.7 102.5 58.6 73.0 7.2 104.0 63.8 74.3 10.6 95.0 69.3 .8.0 13.7 88.5 73.6 81.0 17.5 82.3 77.2 84.5 21.6 78.0 82.7 89.5 24.0 76.0 87.3 89.0 27.8 72.0 90.8 86.0 33.2 -70.0 100.0 -83.0 (3+1) f.t. = -68°
70.0 - 58 (1+1)	
	<u> </u>

Bromine (Br ₂) + Amylene (C ₅ H ₁₂)	Bromine (Br_2) + Carbon tetracl.loride (CCl_4)
Kurnakov, Voskresenskaya and al., 1938	Sameshima and Hiramatsu, 1934
mol% d n mol% d n	mol% f.t. mol% f.t.
25° 100	100,00 -22.9 67,92 -38.5 98.60 -24.3 59.40 -32.1 95.20 30.0 53.50 -28.1 91.32 -36.4 44.68 -25.0 89.01 -42.0 37.89 -22.1 87.26 -44.6 32.51 -20.0 84.90 -47.5 25.62 -17.5
Bromine (Br_2) + Phenylacetylene (C_8H_6)	79.95 -46.7 14.91 -13.1 78.51 -45.8 7.80 -10.6 77.19 -44.3 3.50 -8.9 73.85 -40.8 0.00 -7.3
Kurnakov, Voskresenskaya and al., 1936	
mol% d n mol% d n	Barthel and Dode, 1954
25° 100 0.9250 880 40 2.1397 3146	16
100 0,9250 880 40 2,1397 3146 90 1,0520 1093 33,3 3612 7718 80 ,1999 1402 30 ,4351 2415	0°
70 .3740 1975 20 .5998 6914 60 .5804 3082 10 .8051 1832 50 .8289 5901 0 .9998 971	99,9238 0.094 33,80 61,78 36,50 24,2 99,9064 120 33,85 61,41 36,63 21,3 99,8418 200 33,82 51,00 43,67 20,5
Bromine (Br_2) + Chloroform (CHCl_5) Sameshina and Hiramatsu, 1934	99,521 ,585 32.07 50.62 42.84 20.2 99,043 1.26 33.15 33.72 51.11 16.8 97.80 2.86 33.38 14.77 60.55 10.6 95.21 6.36 31.35 14.33 60.66 10.2 94.55 7.14 32.41 8.80 62.74 7.3 88.22 14.36 30.77 8.06 62.71 6.8 75.47 26.98 27.20 0 67.90 75.18 27.00 26.84
mol% f.t. mol% f.t.	
100.0 -63.5 71.74 -45.7 96.22 -66.2 66.52 -41.0 91.28 -68.9 58.83 -35.0 89.08 -70.3 55.03 .32.7 87.34 -71.5 47.48 -27.8 85.85 -67.4 37.97 -23.5 84.86 -63.8 28.14 -18.8	Bromine (Br ₂) + Carbon tetrabromide (CBr ₄) Biltz and Meinecke, 19 2 3
82.15 -60.0 17.57 -14.5 80.77 -56.8 10.06 -12.0	mol% f.t. mol% f.t.
79.28 -53.5 6.03 -9.7 75.65 -48.2 0.00 -7.3	100 +90 61.4 +19 96.22 +72 55.9 +13 91.6 +63.5 47.0 +1
Bromine (Br ₂) + Bromoform (CHBr ₅)	85.8 +46 44.5 -3 82.7 +42.5 29.3 -17.5 73.9 +32 20.3 -20.0 64.8 +30 10.8 -14.5 66.1 +25
Wright, 1916	
% t p p(100%)	
14.82 18.1 141.5 156.5 15.28 18.1 140.0 - 23.38 18.7 134.5 160.7	

Bromine (Br ₂) + Ethyl bromide (C ₂ H ₅ Br)							(Br ₂) + propane (luor-2,2,	3- T ri-
Wroczynsl	ci and Gu	ye, 1910				Spicer	and Meye	er, 1951			
mo 1%	f.t.	mo	1%	f.t.				b.t.	mo1%		
0	_ 7. 3		5,9	-88.2			v	L	Б. с.	V INDIA	L
13.5	-21.1	70).5	-91.2		1					
25.8 30.0	-31.6 -35.8	72	1.8 7.0	-96.8 -9 7. 6		72.5 66.6	100 78,3	100 95.1	53.0 55.7	29 20	3.9
31.0	-40.7 -42.7	78	3.1	-99.6 -102.1		62.7 59.5	65.8 56.6	$91.3 \\ 87.4$	56.5 56.8	19	1.9 1.5
33.3 47.3	_{-53.4}	83	1.4	-102.6		58.1	55.7	85.4	57.6	_	0.5
51.0 56.7	-78.5 -81.5	84 98	5.7	-107.6 -116.5		51.0 49.1	30.5	62.5	58.9	0.0	0.0
63,2	-84.1	100	0.0	-115.5							
						t	mol	.%	t	mo1%	
							L ₁	L ₂		\mathbf{L}_{1}	L2
						0.0	73.0	2,6	40.1	53,2	5.8
Bromine (Br_2) +	1,1,2-Tr ne (C ₂ F	ifluor-1 7Cl ₂)	,2,2_tric	hloretha_	20.3	64.6	2.9	45.4	49.6	6.5
			557			35.3	56.6	4.6	48.0	47.1	7.4
Spicer	and Meyer	, 1951									
b.t.	mo1	%	b.t.	mo	1%						
	v	L		v	L	Promine (D= \ .	Diha	etylene (<i>a</i> n ,	
47.6	100	100	41.2	47.7	00.	Dromine (ы2) т	DIDIOMAC	etylene (C ₂ Br ₂)	
45.7	89.5	95.1	$\frac{41.2}{42.0}$	47.7 44.9	$\frac{33.1}{16.1}$						
44.2 43.4	80.3 75.2	89.7 86.8	43.4 46.1	41.0 37.0	$\begin{array}{c} 11.1 \\ 8.1 \end{array}$	Kurnako	v, Voskre	senskaya	and al.,	1938	
42.5 41.0	75.2 69.3 54.5	80.0 54.5	51.6 58.9	20.9	2.7	mo1%	d	η	mo 1%	d	η
41.0	34.3	34.3	36,9	0	0			•	25°		
						100	2,2622	936	40	2,9262	4294
						90	. 3956	1298	30	,9572	2960
Bromino (Dr. V.	N: £ 1	. 4 1 . 1			80 70	.5274 .6618	1756 2425	20 10	.9744 .9934	1971 1320
Bromine (C ₂ F ₂ Cl ₂		rethane as	sym.	60 50	.7970 .9051	4315 5743	0	.9998	
	,	C21 2C14	,				.,,,,,	0740			
Spicer a	and Meyer	, 1951									
b.t.	mol		b.t.	mo]							
•	v	L		v	L L	Bromine	(Br ₂) +	α -Trifl	uortoluen	e (C ₇ H ₅ F	3)
01.6	100	100									
91.6 89.0	$\substack{100 \\ 85.1}$	100 97.3	57.9 57.8	$\frac{11.1}{9.2}$	12.8 9.2 6.5	Spicer	and Meye	r. 1951			
77.6 71.0	53.9 40.0	86.2 76.2	57.9 58.4	9.2 7.5 1.9	6.5 0.9	b. t.	mo1		b.t.	mo 19	I
64.8 61.5	27.4 22.2	61.1 49.2	58.9	ő.ó	0.0	1	V	, L	υ. ι.	V IIIO 1	° L
		17.2									
						103.9 96.5	$100.0 \\ 75.1$	100.0 96.6	61.0 58.4	13.5 5.8	37.0 6.6
						90.2 80.1	61.4 42.2	92.0 82.5	58.1 58.5	3.3	6.6 3.3
						71.1	26.4	70.2	58.9	$\begin{array}{c} 2.2 \\ 0.0 \end{array}$	$\substack{1.2\\0.0}$
											
											- 1

Bromine (Br ₂) + Carbon anhydride (CO ₂)	Bromine ($\mathrm{Br_2}$) + Ethyl ether ($\mathrm{C_{1i}H_{10}0}$)			
Francis, 1954	Parmentier, 1892			
t %	% (3+2) f.t.			
L ₁ L ₂	86,32 -13			
25 8 98	84.87 0 82.21 +12 75.12 +22.5 71.67 +32			
Bromine (Br ₂) + Carbon disulfide (CS ₂)	(3+2)			
	Mc Intosh, 1911			
Arctowski, 1896	% f.t. % f.t.			
% f.t.				
54.6 -95 61.0 -110.5 63.1 -116.0	97.4 -119 39.2 -42 90.4 -119.5 33.6 -40 85.6 -107 31.6 -38 81.6 -96 25.9 -12 77.0 -87 23.6 +23			
Bromine (Br_2) + Methyl ether ($\mathrm{C}_2\mathrm{H}_60$) Bruns, 1927	75.4 -82.5 21.4 +20 70.5 -75 17.3 +0.5 64.4 -66 15.4 -10 59.2 -59.5 12.2 -21 55.1 -56 8.5 -20 51.4 -51 6.0 -11 48.2 -48 0.0 -7			
% molar volume (in 1.)				
_70°	Plotnikow, 1906			
21.4 0.170	% н % н			
14.8 .135 28.4 .092 10.5 .142 5.2 .155	0° 3.5 17 16.1 44 5.0 21 17.1 42 5.4 29 17.9 45 6.4 34 18.0 45 8.7 38 18.4 44 9.1 41 20.5 43			
	1 11 2 50 23.75 40			
14.8 .0826 -34 .0609 28.4 .0668 -18 .0806 10.5 .0428 -13 .0876	11.2 50 23.75 40 11.7 49 25.9 40 13.5 46 27.9 39 15.9 38 97.7 1.3			
5.2 .0300	(3+2) f.t. = 22° 55-70% L_1+L_2			

Bromine (Br_2) + Propyl ether ($C_6H_{14}0$)	Bromine (Br_2) + Methylal ($C_3H_80_2$)
Kurnakov, Voskresenskaya and al., 1938	Bruns, 1927
mol% d n molŵ d n	
25°	% и %70° ^и %
100 0.7432 418 17 2.0484 4801 30 1.6472 10320 10 2.3941 3003	dried on CaCl ₂ dried on Na dried on P_2O_5 6.8 205 8.3 260 2.8 47
25 .7910 11260 0 3.1018 983 22.5 .8651 10560	10.3 343 13.1 414 8.4 191
	22.5 409 22.3 333 18.1 334 25.0 370 27.5 328 21.3 337
	28.1 352 33.3 241 25.2 245 35.1 264 38.9 179 28.6 260
Bruns, 1927	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
% molar volume (in 1)	50.8 81 44.1 145
_70° 10.5 0.36	
2.5 1.40 4.8 0.75 7.1 0.55	Browine (Br ₂) + Methyl-benzyl-ether ($C_8H_{10}O$)
18.5 0.27	
% и	Kurnakov, Voskresenskaya and al., 1938
_70°	mol% d n
2.5 14.9 4.8 48.2	0° 25° 0° 25°
7.1 128 10.5 138	100 0.9906 0.9648 1622 1064 75 1.1469 1.1172 2801 1582
18.5 126	50 .4008 .3562 5584 2242 40 .4766 ? 33.3 1.6900 .6234 1176 3060
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Despite (Dr. N. Landland, C. B. C.	27,5 .7771 .7201 ? 1793 3204 25 .8770 .8100 1932 3140
Bromine (Br_2) + Isoamyl ether ($C_{10}H_{22}0$)	22.5 .9607 .9070 1755 3650 209591759
Bruns, 1927	17 2.2010 2.1155 9998 3408 10 2.5083 2.4489 6441 2734
% molar volume (in 1)	0 3.1891 3.1018 1243 983
_70°	
18.3 0.40 23.2 0.35	Bromine (Br_{2}) + Dibenzyl ether ($\text{C}_{1\text{4}}\text{H}_{1\text{4}}0$)
20,2 0,00	
% н	Kurnakov, Voskresenskaya and al., 1938
_70° 18,3 18,7	mo1% d ⊓ 0° 25° 0° 25°
23.2	100 1.0587 1.0365 9561 4220
	50 1.4011 1.4755 14150 4503 25 1.6956 1.6472 17140 4780
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Browine (Br_2) + Ethylene oxide (C_2H_40)	Bromine (Br ₂) + Acctone (C_3H_60)			
Maass and Boomer, 1922	Maass and Mc Intosh, 1912			
½ f.t. ½ f.t.	్ f.t. ఓ f.t.			
0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			
/C H OCL 1	Maass and Mc Intosh, 1912			
Bromine (Br_2) + Dichlorether ($\mathrm{C_4H_80Cl}_2$)				
Bruns, 1927 *** ห % ห -70°	0.0 -7.3 42.8 -39.5 0.4 8.0 47.7 42.5 4.2 12.5 53.2 47.5 6.4 15.0 56.3 50.0 10.8 23.0 58.9 52.0 14.8 27.0 63.3 56.5 17.0 33.0 66.9 60.0 19.9 36.0 78.4 64.5			
11.6 0.686 54.1 4.51 35.0 4.12 59.1 3.73 39.6 3.94 69.1 2.91 47.6 5.43	22.6 36.5 79.4 08.5 24.5 36.0 86.1 72.0 28.3 35.0 89.1 77.0 30.6 34.5 93.4 84.0 35.7 36.5 97.0 84.5			
t u t u	36.4 36.5 98.0 84.0 38.9 -37.0 100.0 -83.0			
8.7% 26%	(3+2) f.t. = _35°			
0 0.115 -10 0.352 -5 .139 -5.5 .351				
-5 .139 -5.5 .351 -9 .165 +0.5 .351 -12 .170 +10 .351 +18 .314	Bromine (Br ₂) + Methyl alcohol (CH ₄ 0)			
	Maass and Mc Intosh, 1912			
Bromine (Br_2) + Ethyl brompropyl ether ($\mathrm{C_7H}_{11}\mathrm{OBr}$)	% f.t. % f.t.			
•	0.0 -7.3 42.3 -70.0			
Kurnakov, Voskresenskaya and al., 1938	1.5 -9.7 45.4 -72.0 4.1 -12.0 48.4 74.5			
mo1% d n mo1% d n 25° 100 1.2431 1053 25 2.0978 10480 50 .6764 3504 15 2.4395 4360 33.3 .8819 7678 0 3.1018 983 29 .9785 9550	7.1			

BROMINE + ETHYL ALCOHOL

Bromine (Br_2) + Ethyl alcohol ($\mathrm{C}_2\mathrm{H}_6\mathrm{O}$)	Bromine (Br_2) + Acetamide (C_2H_5ON)				
Maass and Mc Intosh, 1912	Plotnikov and Jakubson, 1935				
% f.t. % f.t.	Æ	D f.t.	⁵ / ₂ c	D f.t.	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.36 2.11 3.20 4.12 4.68	-0.191 -0.460 -0.750	5.62 5.72 6.67 7.58 8.10	-2.66 -2.94 -4.12 -7.70 -7.45	
18.3 46.5 55.4 82.0 21.3 53.0 60.6 87.0 24.2 -64.0 65.8 -91.0	%	н	%	н	
24.2 -64.0 65.8 _91.0 (1+1) f.t. = _58°	0.84 1.70 3.15	5.4 37.2 160	16.00 17.34 21.45	364 322 2 80	
Bromine (Br ₂) + Pyridine (C ₅ H ₅ N) Plotnikov and Mikhailovskaya, 1938	3.37 6.07 7.52 9.50 10.69 11.34 12.50	128 239 376 398 433 420 421	21.57 22.06 25.74 26.30 28.81 30.93 32.82	252 231 182 175 160 120 106	
mol% f.t. mol% f.t.	14.11 15.31	380 366	35.21 37.27	85.7 73.7	
0 -7.46 6.96 -14.9 1.12 -7.81 10.74 +34.4 2.80 -9.3 10.80 +35.0 4.27 -16.8 12.24 +49.5 4.53 -7.5 15.10 +15.2 6.37 16.84 +34.2	Bromine	e (Br ₂) + Benz	amide (C ₇ H ₇ ON)	
	Finkels	stein, 1926			
Bromine (Br ₂) + Pyridine hydrobromide (C ₅ H ₆ NBr)	%	D f.t.	% D f.t.		
Lombard and Heywang, 1952 (fig.)	0.35 1.37 2.13 3.48	-0.207 -0.252	7.63		
% f.t. % f.t. 100 225 67 101	3.48 3.53 5.94 7.26	-0.308 1	5.41 -1.530 7.80 -2.202		
		Z	d18		
Bromine (Br ₂) + Tetramethyl-ammonium bromide (C _h H ₁₂ NBr) Bloch, Farkas and al., 1949 (fig.)		3.29 7.67 11.45 16.41 25.45	2.985 2.844 2.644 2.513 2.238		
mol% f.t. mol% f.t.		%	d?5		
50 118.5(1+1) 6 8.0 40 79 5.3 -5.2 (16+1) 35 51 4 -5.1 30.1 15.8 E 2 -4.7 25 45 1 -4.0 20 56.5(4+1) 0.3 -7.5 E 15 51 0 -7.3 10 24 8 15.3		27.74 34.27 42.47	2.096 1.943 1.786		
		= <u></u>			

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IODINE + BENZENE

%	н		%	и						
0.24 .38 .75 .80 1.17 1.18 1.55 2.00 2.31 2.71 3.74 4.43	0.002 .007. .147 .233 1.84 1.31 3.84 9.81 13.47 21.30 43.92 61.17	3	8.07 9.38 10.41 10.90 11.54 12.61 13.38 14.76 15.78 16.41 16.94 17.31 19.09	148.8 168.0 185.3 191.0 190.8 194.1 201.8 204.0 199.6 202.4 200.7 195.4 187.4		98.95 98.71 98.33 98.21 95.65 94.11	D b.t. +0.11 .135 .18 .20 .47	89.27 82.45 76.70 71.59 67.11	D b.t. +1.31 2.30 3.22 3.98 4.75	
5.21 5.48 5.50 6.39 7.67 7.80	81.99 87.71 87.36 131.7 137.4 143.4		20.37 22.34 23.83 27.85	178.5 158.2 136.4 105.3		Arctow %	ski, 1896	f.t.		
25.04 27.85 36.93 41.24 41.51	351 342	75° 41.90 42.16 42.47 42.78 43.01	144 178 169 175 177			91.92 91.37 90.40 89.56 88.77		+4.7 +6.6 +10.5 +13.7 +16.3		
t	и . 39%	t	и 3, 38%	t	и 16.41%	Hildebr %	and and J	enks, 1920	f.t.	
0.05 18.00 24.90 30.90 37.80	107.8 131.7 139.4 146.4	0.45 6.00 11.70 18.00 24.10 30.10	154.5 170.1 182.3 201.8 222.0 238.4	13, 15 18, 00 23, 80 32, 80	187.3 202.4 222.3 254.7	85.91 83.90 82.10 79.95	25 30 35 40	77.22 74.49 71.74	45 50 54.64	
Iodine	(I ₂) + I	3enzene (C ₆ H ₆)			Grunert	, 1927 20°	d 40°	60°	
Waentig	, 1909					100	0.87806		0.83645	
L %	V	p	P ₁	1	P ₂	97.6765 95.6143 91.4414	.89446 .90924 .94113	0.85752 .87308 .88794 .91938	.85172 .86630 .89710	
94.97 76.60 58.37 43.71	99.19 96.67 94.48 92.80	755.0 752.3 746.8 746.4	1.89 7.89 13.17 17.31	74 73	3.11 4.41 3.63 9.09					
%		f.	t.							
78.44 77.54 76.60 75.97 75.47 Q diss	(room te	20 25 30 35 40		cal/g	I ₂					

Indine (${ m I}_2$) + Chloroform (CHC ${ m I}_3$)	Iodine (I_2) + Carbon tetrachloride (CC1 $_{f \mu}$)			
	Waentig, 1909			
Waentig, 1909	% f.t.			
% P P ₁ P ₂ L V 96.86 99.54 755.2 at b.t	89.49 20 88.73 25 87.92 30 87.19 35 86.38 40			
87.58 20 86.80 25 86.08 30	Iodine ($ m I_2$) + Ethylene bromide ($ m C_2H_4Br_2$)			
86,08 30 85,17 35 84,42 40	Negishi, Donnally and Hildebrand, 1933			
Q diss (room temp.) -21.58 cal/g I_2	% f.t. % f.t.			
Iodine (I ₂) + Iodoform (CHI ₃)	93,443 8,00 86,34 35,07 93,150 10,00 82,57 45,00 92,141 15,00 80,88 49,60 90,909 20,00 74,06 60,00 89,62 24,80 66,70 70,00 89,68 25,00 62,39 75,00 88,12 30,02 60,15 76,50 86,86 34,20 57,60 78,40 86,58 35,00			
Olivari, 1911				
mo1% f.t. mo1% f.t. 100 119.5 40 85 90 114 30 88 80 109.5 20 98 70 101 10 105.5 60 95 0 112.5 50 90	Iodine (I ₂) + p-Dibrombenzene (C ₆ H ₄ Br ₂) Olivari, 1911 mol% f.t. mol% f.t.			
Van de Vloed, 1939 mol % f.t.	100 88 50 99 90 84.5 30 101.5 80 79.6 20 104 74 78.5 10 107.5 70 86 0 112.5			
90.80 117.5 64.00 92.0 43.20 72.5 24.00 82.0 9.10 105.5 0.00 114.0	Iodine (I_2) + Carbon dioxide (CO_2) Francis, 1954 g t L_1 L_2			

Iodine (I_2) + Carbon disulfide (CS_2)	Pomilio, 1911
	<u>с*</u> п с п
Waentig, 1909	25∘
% P P ₁ P ₂ L V at b. t.	0 402.1 5.40 410.0 0.68 402.7 10.80 428.3 1.36 405.1 21.26 450.5 2.75 408.6
97, 14 99, 95 755, 2 0, 120 755, 08 68, 22 99, 33 762, 8 1, 536 761, 26	* g I ₂ in 100 cc
Kruss and Thiele, 1894	Waentig, 1909
% D b.t. % D b.t.	Q diss (room temp.) -20.64 cal/g I_z
99.03 +0.09 89.47 +1.11 98.09 .175 81.23 2.11 97.02 .275 74.59 3.09 95.49 .43 69.84 +3.18 92.46 +0.77	Indine (I_2) + Ether ($C_4H_{10}\partial$)
	Waentig, 1909
Arctowski, 1905	β p p ₁ p ₂ L V
% f.t. % f.t.	at b.t. 96.41 99.98 757.3 0.0406 757.26
99.68 -100 93.42 -5 99.63 -95 92.11 0 99.59 -90 90.79 +5 99.54 -85 89.49 10 99.49 -80 87.65 15 99.45 -75 85.38 20 98.738 -63 83.08 25 96.53 -25 80.74 30	83.83 99.91 757.8 .194 757.61 72.06 99.82 748.8 .388 748.41 70.91 99.81 751.2 .400 750.8 Q diss (room temp.) -7.87 cal/g I ₂
95.86 -20 77.33 36 95.18 -15 74.78 40	Kruss and Thiele, 1894
94.48 _10 73.25 42	% D b.t.(ether)% D b.t. (ether)
Waentig, 1909 % f.t.	99.743 +0.021 86.68 +1.29 98.92 .09 85.42 1.375 97.40 .23 78.29 2.285 95.79 .36 73.78 2.545 94.79 .465 71.13 +2.78 93.65 +0.575
76.22 20 74.95 25 73.72 30 72.31 35 70.96 40	Arctowski, 1896
	% f.t.
Hildebrand, Benesi and Mower, 1950 wt% mol% f.t.	85.42 -90 84.91 -108 84.61 -83
92.32 97.56 0.0 83.54 94.42 25.0 78.39 92.36 35.0	

Jacek, 1915				Indian (I) Incomplete (C II)
%	f.t.	%	f.t.	Iodine (I ₂) + Isoamyl alcohol (C ₅ H ₁₂ O)
86.89	-108	85.42	-45.75	Kosakewitsch P.P. and M.S., 1933
86.89 86.77 86.54	-102.75 - 94.5	85.63 84.97	-45 -40.25	mol % d
86.80 86.60 86.72 86.46 86.09 86.14 86.14 85.88	- 94 - 83.25 - 80.5 - 75 - 63 - 62.5 - 58.75	84.57 84.92 84.29 84.21 83.85 83.98 83.55	-38 -35 -34.75 -33 -27.5 -25.75 -24.5	23° 100 0.809 98.46 0.827 97.46 0.840 95.82 0.860
85.88 85.77 85.71 85.41	- 51.5 - 49.5 - 48.75 - 47	83.06 82.79 82.25 79.34	-21 -19.5 -14.75 - 0	Indine (I_2) + Acetic acid ($C_2H_u\theta_2$)
				Waentig, 1909 (fig.)
Hildebrand, B				_
w1 %	mol		f.t.	20 88.38 25 87.75 30 87.07
80.66 74.78 71.50	91.0	4	0.0 25.0 35.0	30 87.07 35 86.49 40 85.96
Pomilio, 1911				Indine (I_2) + Benzoic acid ($C_7H_6O_2$)
c	m	<u> </u>	<u> </u>	-
0 0.67	240.0 239.0	5.20 9.50	253.9 268.0	Oliveri, 1911 (fig.)
1.32 2.62	241.7 247.7	18.97	299.7	mol % f.t. mol % f.t.
c = g iodin	ne in 100 cc			100 123 40 112.0 L ₁ +L ₂ 90 116.5 30 " 80 111 20 "
				72 108 10 " 60 111 0 112.5 50 111.5
Iodine (I ₂)) + Ethyl alc	ohol (C ₂ l	1 ₆ 0)	
	Benesi and Mov			Iodine (I_2) + Benzoic anhydride ($C_{14}H_{10}O_3$)
wt %	mol 9	<u> </u>	f.t.	Oliveri, 1911 (fig.)
83.33 78.62 75.30	96.49 95.29 95.41) } !	0.0 25.0 35.0	mol% f.t. mol% f.t.
Waentig, 1909 Q diss. (roc	om temp,) = -	-7.66 cal/	g iodine	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Iodine (I_2) + Ethyl acetate ($C_{ m h}H_8O_2$)	Iodine (I_2) + Tetramethylammonium iodide ($C_{i_4}H_{j_2}NI$)
	Olivari, 1908
Waentig, 1909 (fig.)	mol% f.t. mol% f.t.
\$ f.t. 20 78.01 25 76.48 30 75.17	0 112 26.25 98.2 7.767 101 27.08 105.5 12.9 93.8 29.80 124.0 14.9 92 30.52 125.1 16.0 98 31.89 126.5 16.86 103 33.31 125.85
35 75.17 40 75.30	18.0 106 35.08 124.2 19.27 106.7 38.44 117.0 20.0 106.4 40.16 110.0 20.23 105.5 43.14 102.5 21.67 103.6 46.62 115.5
Iodine (I ₂) + Benzidine (C ₁₂ H ₁₀ N ₂)	22.79 98.5 49.62 118.5 23.82 98.4 52.18 117.5 (4+1) 24.93 98.3 54.78 117.6 (2+1)
01iveri, 1911 (fig.)	
mol% f.t. mol% f.t. 100 68 40 99 90 65 30 100,5	Iodine (I_2) + Trimethylphenylammonium iodide ($C_9 H_{14} NI$)
80 61 20 103.5 70 57 10 106	Olivari, 1908
60 85 0 112.5 50 95	mol% f.t. mol% f.t.
60 85 0 112.5	mol% f.t. mol% f.t.

F	
Ovugon (O) + Ethulana (C H)	
0xygen (0_2) + Ethylene (C_2H_4)	Oxygen (0_2) + Carbon monoxide (CO)
Massan and Dallau 1022	1,000
Masson and Dolley, 1923 P Dv 100	Trautz and Melster, 1930
P <u>BV</u> . 100	mo1% n
25.27% 49.91% 59.84%	26.9° 126.9° 226.9°
30 -2.4 -3.1 -3.7	100 17.76 21.83 25.48
1 40 3.6 5.3 6.1	100 17.76 21.83 25.48 82.28 13.24 22.50 26.26 76.63 18.41 22.63 26.50
60 7.9 13.8 16.3	$\begin{bmatrix} 57.99 & 19.00 & 23.43 & 27.41 \\ 40.73 & 19.48 & 24.07 & 28.20 \end{bmatrix}$
70 11.4 20.7 26.3 75 12.4 24.0 29.3	22.67 19.98 24.82 29.08 18.06 20.12 25.01 29.28 0 20.57 25.68 30.17
75 12.4 24.0 29.3 80 12.6 24.2 29.5 90 12.0 21.9 26.1	0 20.57 25.68 30.17
100 10.8 18.9 21.0 110 9.5 14.7 16.1 120 8.3 11.3 11.7	
120 8.3 11.3 11.7 125 7.7 9.7 9.6	
	Mallard and Le Chatelier, 1380
	vol% temp. of explosion
Trautz and Melster, 1930	85 630 - 650
mol %	85 630 - 650 70 645 - 650 30 650 - 680
20° 50° 100°	
0 20.19 21.81 24.33	
4.21 19.67 21.25 23.76 13.06 18.54 20.04 22.43	Michelson, 1889
41.45 15.29 16.58 18.65 60.81 13.41 14.54 16.45	
60.81 13.41 14.54 16.45 77.03 11.98 13.08 14.79 100.00 10.10 11.07 12.62	
	25 30 65 88 30 40 70 91
	35 49 75 91 40 58 80 85
Overgon (O) + Acceptage (C.H.)	45 66 85 70
0xygen (0_2) + Acetylene (C_2H_2)	50 73 90 45 55 80 95 20
P	exp. vel. = explosion velocity (cm/sec.)
Baccei, 1899	
Absorption spectrum,	
w.1. Pm*	Coward, Cooper and Jacobs, 1914
0% 25vol% 50vol% 75vol% 100%	vol% p explosion vol% p explosion
red 11.5 7 5.5	error e consiste de la constan
6417 12	94.0 400 37.5 24 93.9 175 35.3 27 92.5 108 33.3 32
6417 - 12 6 4 3 6395 - 7.5 4 3 2 5707 - 15 10 7.5	91.0 99 25.0 74
5707 15 10 7.5 5435 - 12.5 8.5 6 5419 - 12 7.5 5 3.5	85.7 78 18.4 106
$\begin{bmatrix} A & 4 & 6 & 7.5 & 16 & 1 \end{bmatrix}$	li 75.0 46 16.0 135
D 7 9 14	66.7 51 15.0 148 50.0 30 14.3 340
*minimum pressure (in atm.) where absorption	40.0 26
spectrum can be seen.	

			-	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				14.	.04°	······································	
	en (0 ₂)	+ Carbon	dioxide (CO ₂)		10318 9504 8726 7926 7272	65.06 67.91 70.87 74.06 76.79	-	4761 4402 4066 3947 3700	90.15 93.16 96.35 97.55 100.97	786 888 933
		conder	nsation	 -		7095 6337	77.46 80.59	43 265	3287 3002	109.15 118.66	-
t	beginn.	P		end	P	5694	84.65	457 15	2823 .41°	128.20	-
	· · · · · ·		t mol %	V*	<u> </u>	10276 9515	66.02 68.77		4667 4538	92.81 93.84	361 273
10,06	9233.5	-	10.09	3205 102	.485	9515 8763 7991	71.74 74.91	-	4460 4419	94.43 94.87	164 -
12.155 14.125	8190.5	66.35 71.57 77.29	12.20 14.11	3633 100 3994.5 97	0.055	7159 6435	78.62 82.05	-	4045 3692	98.88 103.36	-
16.01 16.23	5803 5530	86.02 87.84	$16.00 \\ 16.22$	4784 92	.57).55	5971 5604	84.325 86.34	139 228	3253 3008	$113.06 \\ 122.03$	-
		-, •	3 mol %			5229 4999	$88.71 \\ 90.31$	377 367	2821 2732	133.17 141.72	-
17.535 17.63	8483	66.08 66.40	11.68 14.78	2757 87	.52 .09	4844	91 .44	387 16	.27°		
19.48 20.19	7708 7 362	69.48 71.59	17.525 17.68	2986 88	3.25 3.29	10312 9519	66.345 69.28	_	4824 4434	$92.72 \\ 96.05$	-
20.28 21.48	7288 6709	71.94 74.85	$\frac{19.38}{20.19}$	3195 88 3292 88	3.465 3.35	8701 7955	72.58 75. 7 7	-	4031 3647	100.54 106.62	-
22.06 22.38	6456 6098	76.24 77.85	$\begin{array}{c} 20.28 \\ 21.48 \end{array}$	3664 87	3.35 7.35	7163 6389	79.37 83.20	-	3284 3053	114.28 122.29	<u>-</u>
22.83 22.87	5860 5822	79.24 79.26	22.09 22.43	4069 86	.58 .03	5984 5592	85.31 87.57	-	2857 2759	$133.275 \\ 140.7$	-
22.98 23.23	569 7 5366	79.95 81.46	22.80 22.885	4324 85	.34	5228	89.80	- 17	.66°		
			22.98 23.18	4441 84 4663 84	.90 1.16	10273 9510	$\frac{67.26}{70.17}$	_	4843 4087	$94.59 \\ 102.08$	-
i			00 %			8683 7920	73.60 76.98	-	3688 3280	108.02 117.36	-
30.05 30.82	5594 4833	71.47 72.725	$30.11 \\ 30.81$	3328 71 3725 72	1.53 2.74	716 1 6359	80.585 84.77	-	2973 2816	129.44 141.18	-
			constants			5610	89.15	-		- 1- 1- 0	
t = 30		P = 72. 93						89.53	mol %		
li .	volume fi		f the theor	etical nor	mal	11384	58.35	17	.60°	74.24	1104
 		10.				10605 9826	60.46	-	5157 4486.5 4379.5	74.26 77.12	1194 1502
v	P	v liq.	v mol %	P	v liq.	9047 8503	64.84 66.24	=	3482	77.68 83.35	1556 2189
<u>]</u>			62°			7489.5 6712.5	67.85 69.54	338	2954 2848	88.30 91.715	-
9795	64.05	-	4022	91.55	1464	6108	71,12	571 826 879	2719.5 2572	97.38 103.13	_
9412 8792	65.36 66.89	124	3338 3164	$100.07 \\ 102.67$	2221	59 3 5 53 8 5	71.65 73.39	1105	2466	123.34	-
7948 6847	69.16 71.79	308 470	2874 2742	$112.50 \\ 121.35$	-	11699 11384	58.86	- 20	.29° 4468	80.88	1360
6404 5500	74.92 79.65	672 909	2699 2632	125.18 129.33	- - -	10605	59.72 61.94	-	4379 3640	81.39 85.35	1445 2230
4811	84.23	1122	2581 .35°	135.67	-	9826 9047 8900	64.31 66.62	-	3501 3335	86.91 88.28	2540
10341	63.46 66. 2 5	-	4097	92.84 96.79	1376	8269	67.15 69.04	-	3132 2959	91.50 95.64 97.76	-
9505 8763	68.905	-	3712 3446	100.08	1707 2336	7490 7291	71.41 71.98	-	2897 2759	97.76 104.46	-
8629 7950	69.37 70.95	217	3397 3280	100.89 102.21	=	6713 5935	73.07 75.32	267 596.5	2613 2527	114.89 125.125	-
7203 6396	72 525	384	3028	$110.48 \\ 119.11$	-	5157	77.94	968 21 99°	(critical)		
	73.535 77.02	3/3	2853								
5608 4829	73.535 77.02 81.14 86.40	781 1097	2718 2621	128.44 137.56	-	12159	58.36	-	5157	80.34	638
5608 4829	81.14 86.40	781 1097	2718 2621 (critical)	128.44 137.56	-	11384 9826	$60.52 \\ 65.32$	- -	5157 4379 3878	80.34 83.76 86.60	638 1169
5608 4829 10259 9570	81.14 86.40 64.42 66.77	781 1097 12.51°	2718 2621 (critical) 4772 3981	128.44 137.56 88.24 95.61		11384 9826 8269 6713	60.52 65.32 70.37 75.37	-	5157 4379 3878 3613 3054	83.76 86.60 88.74 97.115	
5608 4829 10259 9570 8741 8040	81.14 86.40 64.42 66.77 69.74 72.27	781 1097 12.51°	2718 2621 (critical) 4772 3981 3606	128.44 137.56 88.24 95.61 99.65 105.38	- 1041	11384 9826 8269	60.52 65.32 70.37	- - -	5157 4379 3878 3613	83.76 86.60 88.74	1169
5608 4829 10259 9570 8741	81.14 86.40 64.42 66.77 69.74	781 1097 12.51°	2718 2621 (critical) 4772 3981	128.44 137.56 88.24 95.61 99.65	- 1041	11384 9826 8269 6713 6400	60.52 65.32 70.37 75.37 76.42	- - - -	5157 4379 3878 3613 3054 2769	83.76 86.60 88.74 97.115	1169

									
v	P	v liq. 89.53 п	v nol %	P	v liq	v	P 100 5		P
12159 11384 10605 9826 9047 8269 7489.5 6712.5 5913 5546 5157 4768	89.53 60.90 63.25 65.78 68.285 70.92 73.49 76.09 78.74 79.97 81.33 82.89	22. - - - - - - - - - - - - - - - - - -	4379 4309 4278 4258 4243 4219 4218 3991,5 3604 3049 2752 2612	84.735 85.05 85.22 85.35 85.40 85.54 85.53 87.03 90.23 99.19 112.67 124.50	709 591 625 288 95 125	10086 9314 8570 7771 7017 6267 5528 5117 4742.5 4364.5	31.3 63.87 65.995 67.945 70.03 71.68 73.035 73.94 74.24 74.24 74.56 34.0	2593 2593 2439 2377 02° 3971 3243	74.69 75.00 76.20 82.02 89.90 99.77 111.45 122.79 136.71 78.385 81.11
12159 11785 11384 10605 9826 9047 8269 7490 6712.5 5935	58.95 60.04 61.21 63.59 66.09 68.70 71.34 74.04 76.71 79.48	-	29° 5546 5157 4768 4379 3991 3605 3046 2791.5 2646	80.80 82.29 83.78 85.88 87.97 91.26 101.03 112.40 124.08	-	8560 7791 7023.5 6255 5529.5 4672 10863 10093 9339 8554 7810 7059	67.295 69.49 71.64 73.65 75.34 76.605 77.575 37.4 64.56 66.90 69.29 71.73 74.11	5525.5 4770 4011 3230 2799	86.16 95.02 105.95 119.53 136.66 80.47 82.11 83.89 88.89 103.08
12159 11384 10605 9826 9047 8269 7490 6712 5935	59.81 62.14 64.59 67.23 69.97 72.78 75.69 78.59 81.69		5156 4768 4379 3991 3609 3229 2846 2710	84.85 86.61 88.70 91.40 94.97 101.13 114.98 124.35	-	7059 6287 11546 10794 10047 9211 8486 7640 6915	76.40 78.585 64.85 67.28 69.81 72.78 75.48 78.57 81.31	2609 2495 95° 6181 5320 4530 3778 3087 2817 2642	119.27 136.01 84.04 87.18 90.13 94.10 105.01 117.96 234.85
		100	0 %			12311	65.20	6899	87.07
8573 7812 7046 6227.5 5504 4837 4068 3205 3085	63.12 64.36 64.42 64.41 64.41 64.40 69,39 64.42 64.37		2869 2798 2645 2520 2438 2366 2309 2270	64.41 64.43 70.91 80.655 92.97 105.79 122.555 138.42		12311 11572 10787 9970 9232 8442 7678 13174 12356 11586	67.69 70.52 73.61 76.61 80.07 83.38 57. 69.20 72.18 75.42	6118 5380 4570 3823 3129 2864 75° 7668 6930 6113	90.90 94.78 99.62 105.50 119.38 135.56 91.16 95.79
9338 8565 7807.5 7030 6950 6673 6300 5502 4712	63.44 65.19 66.755 67.995 68.19 68.39 68.41	28 - - - - - 290 947 1625	3974 3119 3011 2813 2670 2546 2446 2369 2315	68.48 68.45 68.43 72.405 78.55 89.54 103.47 119.61 136.58	2189	10807 10009 9271 8482 Trautz and Em	78.99 82.49 86.62	5372 4596 3795 3421	107.06 114.45 126.10 135.81
10068 9314 8582 7809 7031 6275 5483 5102 4777 4403 4254	63.36 65.39 67.22 69.085 70.73 71.95 72.745 72.87 72.93 72.94 72.98		3959 3656 3296 3230 3051 2862 2721 2593 2509 2435 2362	72.96 72.995 73.53 73.89 75.43 79.43 86.10 95.70 106.18 119.35 138.65	1	755	excess of	pressure (by mixing)
	72.98	-			_				

Booth and	d Carter,	1930					ds and Ros	eveare,	1942		
t	P		t	P		m	ol %		virial co- units . 1		t B ₁₂
-13.16 -13.32 -13.96	122.54 122.54 122.54	50 vol : V V+L V+L	-30.32 -33.04 -33.44	138.86 139.54 140.21	V+L V+L V	4	8.17 (?)	25°	-25.2		
-14.62 -19.44 -19.47 -25.11	103.64 131.52 132.19 151.29	V+L V+L V V V	-33.38 -33.50 -33.60 -35.22 -35.71	140.21 135.63 135.63 140.66 140.91	V+L V+L V V+L	Kapp,	1907				
-28.38 -29.04 -29.68	143.00 137.50 140.21	V V+L V	-35.87 -38.09	140.91 140.81 141.44	L V+L V+L	%	đ	*	d	%	đ
-29.68 -30.20 -30.20	137.50 137.50 138.86	V+L V+L V 40 vol	-37.63 -37.58	144.30 140.41	L L	0 5.25	0.001429 .001455	47.00	0.001650 .001674	70,10 77,45 78,25	0.001800 .001840 .001845
-20.23 -20.26 -20.66	107.94 107.94 108.62	V V+L V	-21.67 -22.49 -22.26	117.57 119.91 119.91	V V+L V	11.51 16.30 21.15 26.12	.001486 .001515 .001538 .001575	48.30 51.95 53.40 54.61	.001685 .001700 .001708 .001715	81.80 85.45 92.15	.001870 .001885 .001922
-20.89 -21.12 -21.03 -21.06	108.62 108.62 108.62 108.62	V+L V+L V V+L	-24.97 -24.97 -30.99 -30.99	128.81 129.11 134.66 137.28	V+L V V+L V	32.19 36.05 38.75	.001600 .001614 .001630	55.70 61.00 65.50	.001721 .001750 .001775	94.55 100.00	.001935 .001965
-20.56 -20.40 -21.32 -21.29	89.56 89.65 117.26 117.94	V+L V V+L V+L	-30.92 -30.95 -31.12 -37.28	137.28 136.90 137.05 141.05	V V+L V V+L	Fucl	ns, 1918				
-21.22 -21.25	118.57 119.91	V+L V	-37.25 -37.25	141.35 141.20	V V	vol	Dv.	(%)	vol%	Dv (6)
-21.74 -21.67 -21.84	89.56 118.57 117.96	V+L V V+L	-37.32 -39.18 -38.75	141.20 135.64 135.64	V+L V+L	0	0		16 mm 60	2,20	
-44.86	103.66	20 vol	%		17.1	10 20	0	.98 .53	70 80	1.88 1.33	
-44.93 -49.90 -49.84 -49.94	103.66 110.46 111.14 110.46	V+L V+L V V	-59.90 -60.26 -60.26 -60.33 -60.98	69.64 129.69 129.32 129.47 130.37	V+L V V+L V V	30 40 50	2 2	.01 .34 .41	90 100	0.71 0	
-49.90 -48.76 -48.23 -48.73	111.14 100.59 100.59 100.59	V+L V+L V V+L	-60.98 -61.27 -62.57 -62.74 -62.57	129.69 130.37 130.37 140.79	V+C V+C V+C V	Van I	tterbeek a	nd De Cli	ippeleir,	1947	and a special or an analysis of
-49.87 -49.77 -53.57	100.59 106.66 52.64	V+L V V+L	-60.39 -60.39	130.37 130.97	V+L V	t	% (ε-1). <u>10</u> 6	t	%	(g-1).106
-53.50 -52.06 -52.16 -57.88 -57.88	52.64 116.30 116.30 126.66 127.26	V+L V+L V+L V+L V	-62.02 -62.09 -62.31 -60.27 -59.90 -60.07	130.37 130.27 130.27 69.64 69.64 69.64	V+L V+C V+C V+L V+L	30.00 30.14 30.07 30.21	100 94.994 89.880 79.987	828 792 774 714	30.14 30.05 30.07 30.91	69.95 34.62 18.16 0	1 579
-58.39 -64.11	34.64 69.64	V+C 10 vol	-67.23	103.64	V V	30.00 30.21	100 73.02	476 301	30.00	0	156
-65.08 -65.24 -65.31 -65.17	69.64 86.64 86.64 86.64	V+C V V+C V	-67.26 -67.36 -70.97 -71.00	103.64 103.64 137.64 137.64	V V+C V V+C	Kapp,	1907				
vo1 %	t	P		t P		*	U (ratio)	%	U (ratio)	%	U (ratio)
		rit.		maxim.		0	1.3960	42.50	0° 1.3484	70.10	1.3215
100 90	+31.00 +22.51	86.0	+23	.8 81	.8	5,25 11,51	1.3960 .3906 .3818	47.00 48.30	.3436 .3389	77.45 78.25	.3164 .3125
80 50	+12.50	99.6 140.7	+16. - 8.	.3 89 .41 103	.2	16.30 21.15 26.12	.3773 .3663	51.95 53.40	.3412 .3367 .3332	81.80 85.45 92.15	.3125
40 30 20	-60.05	148.0	-19. -31.	.97 102 .75 101	.8 .0	26.12 32.19 36.05	.3636 .3571 .3495	54.61 55.70 61.00	.3332 .3327 .3294	92.15 94.55 100.00	.3030 .2993 .2960
0	-118.8	49.2	-48.	.73 98	.1	38.75	.3495	65.50	.3269	100.00	
											

Sulfur (S) + Benzene (C ₆ H ₆)	Sulfur (S) + Toluene (C ₇ H ₈)
Lucy de la cond Maibrigan 1900	Alexeev, 1886
Aronstein and Meihuizen, 1899 % b.t. % b.t.	% sat.t. % sat.t.
747mm 100 78.9 - 79.0 92.692 79.660 99.400 79.071 91.587 79.740 98.300 79.172 90.436 79.924 97.146 79.280 89.297 79.906 96.045 79.330 88.135 79.983	93.6 103 63.34 179.5 91.53 125 57.6 171 90.36 127 38.03 137 86.36 150 21.9 50 79.17 172
94,872 79,479 86,500 80,062 93,798 79,568	
	Teletov and Pelikh, 1929
Alexeev, 1886	% sat.t. % sat.t. 97.90 42 73.69 114.5
\$\frac{1}{8}\$ sat.t. \$\frac{1}{8}\$ sat.t. \[\begin{array}{cccccccccccccccccccccccccccccccccccc	96.27 52.5 70.14 124.5 93.87 68 68.30 129.5 92.11 79 66.41 134.5 89.87 86 64.45 139.5 87.95 90.5 21.34 172 84.83 95.5 14.75 137 80.14 103.5 10.90 128 78.73 106.5 8.72 117 77.42 109 6.45 114
Etard, 1894	Haywood, 1896-97
% f.t. % f.t.	% b.t.
98.8 8 93.2 65 98.7 10 91.4 72 93.2 21 82.5 100 97.4 30 68.1 123 96.7 39 66.0 237 96.0 47 63.2 150	100 110 L ₁ +L ₂ +C+V 112,05
95.1 54 Teletov and Pelikh, 1929	Sulfur (S) + Heptane (C ₇ H ₁₆)
% sat.t. % sat.t.	Teletov and Pelikh, 1929
97.290 50 64.820 128.5 95.015 65.5 62.110 134 93.250 73 60.590 137 91.560 78.5 53.290 143 89.850 84 50.850 146.5 87.940 87.5 47.570 152 85.810 91.5 44.130 153.5 83.950 94.5 39.640 155 82.440 97.5 30.650 153 78.850 102 19.010 141	\$\psi\$ f.t. m.t. \$\psi\$ f.t. m.t. 99.71 21 - 94.44 103.5 103 99.50 38 - 93.13 111.5 109 99.24 47.5 - 92.34 120.3 112.5 98.95 54 - 91.56 131 125 97.81 75 75 90.79 148 131.5 96.75 83 81 90.04 151 142 96.13 91 90 89.20 160.5 151.5 95.62 96 95 88.57 163 159
76.670 103 17.710 138 74.500 105 15.380 128 72.370 109 11.120 120 70.670 114.5 9.680 116-119 67.740 120.5 4.450 110.8 66.900 125 3.970 111	

68 	30270	R + m-XYLENE
Sulfur (S) + m-Xylen	e (C ₈ H ₁₀)	Sulfur (S) + Xylene (C ₈ H ₁₀)
Aronstein and Meihuize	n, 1899	Haywood, 1896 ~ 1897
% b.t.	% b.t,	% b.t.
762mm		100 138,95
99.020 139.172 92 98.033 139.337 91 96.991 139.505 88	.015 139,939 .608 140,128 .067 140,328 .640 140.618 .890 140,931	L ₁ +L ₂ +C+V 143
94.970 139.803		Sulfur (S) + Triphenylmethane (C ₁₉ H ₁₆)
Teletov and Pelikh, 19	29	Smith, Holmes and Hall, 1905
% sat.t.	% sat.t.	% sat.t. inf. % sat.t. sup.
97.73 43 96.09 62 94.50 70 93.46 74 92.04 79.5 90.59 84 89.36 88 88.35 91 86.97 92.5 84.75 97.5	82.27 102.5 78.10 110.5 76.26 113.5 74.18 117 72.15 122.5 69.86 130.5 68.22 137 54.94 169 51.72 179 48.22 183-184	4.28 103.5 15.39 214.5 5.19 117.0 17.17 211.0 6.56 127.0 20.09 206.0 7.49 131.0 23.61 203.0 3.82 136.5 26.63 200.0 9.60 141.0 29.68 199.0 11.79 144.0 35.42 198.0 16.45 146.5 13.73 147.0 22.68 146.0
Sulfur (S) + p-Xyle		Sulfur (S) + Naphthalene (C ₁₀ H ₈) van Bylert, 1891
% sat.t.	% sat.t.	% f.t. % f.t.
inf, sup, 79.62 94.0 79.2 101.0 74.1 117.7 72.05 124.5 71.96 124.2 69.78 130.0	inf. sup 53.7 175.0 220. 51.7 175.0 206. 38.3 190.0 28.8 190.0	92.3 76.1 49.88 89.5 90.1 75.5 29.88 99.0
71.96 124.2	19.0 134.0	
63,05 137,3 - 65.4 144.5 - 65.1 149,0 - 60.1 158.5 - 56.0 167.0 235.0 55.9 167.5 -	19.0 134.0 14.4 176.0 14.5 156.0 12.1 162.5 187. 10.0 150.0 203. 9.0 143.0 205.	0 030 (03) (43)
63.05 137.3 _ 65.4 144.5 _ 65.1 149.0 _ 60.1 158.5 _	14.4 176.0 - 14.5 156.0 - 12.1 162.5 187. 10.0 150.0 203.	Sulfur (S) + Anthracene (C ₁₄ H ₁₀) Ketelaar and Jibben, 1948 (fig.)
63.05 137.3 - 65.4 144.5 - 65.1 149.0 - 60.1 158.5 - 56.0 167.0 235.0 55.9 167.5 -	14.4 176.0 - 14.5 156.0 - 12.1 162.5 187. 10.0 150.0 203.	Sulfur (S) + Anthracene ($C_{1}_{\mu}H_{10}$)

rhomb.

3.5

116

113 112

Sulfur (S) + Carbon disulfide (CS ₂)	
Beckmann, 1890	Etard, 1894
	% f.t. % f.t.
% D b.t. % D b.t. 98.942 0.095 94.355 0.516 98.507 .143 94.214 .540 98.452 .151 91.707 .770 97.924 .195 90.941 .830 97.175 .276 87.75 1.113 97.175 .275 86.86 .210 96.943 .294 84.74 .378 96.124 .355 82.65 .590 94.707 .515	96.4 -61 66.6 26 95.6 -55 65.4 27 89.4 -19 62.2 29 89.2 -18 60.3 30.5 88.5 -17 57.8 33 87.6 -13 51.3 40 86.6 -11 46.8 44 82.8 -2 43.8 46 80.5 +3 42.5 48 76.9 9 40.0 53 76.3 11 39.4 54 77.1 14 32.1 65 77.2 8 17 23.6 77.5 71.1 19 20.6 81 71.5 20 12.2 92 70.3 21 9.9 98
Helff, 1393	71.1 19 20.6 81 71.5 20 12.2 92 70.3 21 9.9 98
% D b.t. % D b.t.	
98,88 0,104 91,48 0,761 98,84 ,107 89,23 0,985	Jacek, 1915
97.35 .243 87.65 1.083 96.88 .287 86.03 .264	% f.t. % f.t.
95.22 .455 83.44 .438 94.73 .481 81.97 .597 92.85 .655 73.23 .920	98.92 -111.5 94.55 -51 98.95 109.5 94.44 47 98.19 99 93.85 44 97.81 86 93.11 41
Aronstein and Meihuizen, 1899	97.31 86 93.11 41 97.70 82 92.63 36.5 97.64 81.5 91.08 28.5 97.19 74 90.12 25 96.80 70.5 88.95 21 96.45 65 87.75 17 96.37 63 86.85 13.75 96.17 62 86.74 13 95.68 59 81.09 -0
% D b.t. % D b.t.	96.37 63 86.85 13.75 96.17 62 86.74 13 95.68 59 81.09 -0
95.778 0.364 80.77 1.547 92.743 0.635 77.89 1.747 89.980 0.862 75.45 1.910 87.010 1.995 73.09 2.064 83.970 1.323	95.68 59 81.09 -0 95.47 -57.5
	Beckmann, 1890
	% d (at b.t.) % d (at b.t.)
Guglielmo, 1892 7 t p 97.238 10.80 197.58 97.238 10.23 192.33 92.607 11.46 200.06 91.40 0 123.74 89.94 11.15 195.65 85.256 11.90 199.80	100,000 1,2223 94,707 1,2487 98,942 ,2274 94,355 ,2506 98,507 ,2295 94,214 ,2513 98,452 ,2297 91,707 ,2651 97,924 ,2323 90,941 ,2694 97,186 ,2360 87,75 ,2883 97,175 ,2361 86,86 ,2939 96,943 ,2372 84,74 ,3075 96,124 ,2414 82,65 ,3216
85.256 12.54 205.01 81.0 (sat.sol) 0 120.06 77.18 13.80 211.39	Guglielmo, 1892
	% d % d
	13° 100 1.273 85 1.550 95 1.363 80 1.648 90 1.455

Pfeiffer, 1897	Berghoff, 1894
% d % d	% n _D τ.10?
15°	3.5° 22.7°
100 1.2708 88 1.3297 98 .2802 86 .3399 96 .2901 84 .3502 94 .2998 82 .3604 92 .3096 80 .3709 90 .3195	100 1,64132 1,62522 8443 95,24 ,65153 ,63668 7735 90,91 ,66175 ,64704 7662 86,96 ,67170 ,65772 7231 83,33 ,68105 ,66643 7647 80,00 ,69073 ,67564 7860
Rosental, 1930	Forch, 1902
% d _t	% n ₂ -n ₁ % n ₂ -n ₁
100 1.29369 - 0.001477 t	17.5°
93.42 .32703001436 t 87.25 .35422001391 t 79.17 .39722001384 t 76.70 .41005001412 t	98,773 0.00287 86.11 0.03396 96,895 .00732 81.26 .04638 94,895 .01196 73,56 .06750 90,882 .02182
Dobinski, 1932	
t d t d t d	Eggers, 1904
75,41% 82,29% 89,97%	% ε % ε
18.0 1.3925 19.1 1.3535 16.8 1.3171 27.2 .3795 24.9 .3453 27.0 .3021 31.2 .3740 30.5 .3376 30.6 .2972 94.74% 100%	19° 100.0 2.65 88.44 2.15 96.8 2.55 72.74 2.08 94.16 2.37 71.20 2.05
17.7 1,2933 19.2 1,2656 28.8 1,2767 27.0 ,2530 31.0 ,2471	Rosental, 1928
Police 1000	t s t s t s
Pekar, 1902	76.70 \$
	35.33 2.9494 22.16 2.9919 11.49 3.0195
78,02% 100% 17,5 35,175 20,0 32,388	1 30.04 2.9670 14.78 3.0191 7.67 3.0102
17.5 35.175 20.0 32.388 60.5 28.942 61.1 26.275 99.9 23.261 100.0 20.560	29.84 2.9689 12.71 3.0198 6.17 3.0293 22.31 2.9912 70.17 #
77.7	79.17 % 31.10 2.9375 15.69 2.9834 9.84 3.0004 19.69 2.9747 12.72 2.9919 7.98 3.0044 19.60 2.9748
Worley, 1907	87.25 %
c* ø	35.17 2.8397 17.69 2.8962 9.05 2.9234 35.08 2.8427 12.14 2.9152 8.97 2.9217 25.51 2.8730
31°	93.42 %
0 29,600	30.09 2.8022 14.91 2.8487 5.29 2.8745 22.26 2.8269 9.38 2.8648 5.29 2.8693
10 30,505 20 31,182	22.13 2.8255 8.58 2.8752
30 31.593	100 % 36.05 2.6707 24.05 2.6997 11.35 2.7272
* g S/100cc	36.05 2.6707 24.05 2.6997 11.35 2.7272 30.14 2.5841 20.00 2.7118 11.05 2.7296 29.97 2.6838 16.27 2.7195 10.96 2.7296 24.20 2.6998 16.22 2.7186

Dobinski, 1932	Sulfur (S) + Bromoform (CHBr ₃)
t E	Rheinboldt and Schneider, 1928 (fig.)
75.41 \$\frac{\pi}{2}\$ 18.0	\$ f.t. % f.t. 50 82.5 20 110 40 93 10 115
19.1 2.790 24.9 2.770 30.5 2.752 89.97 \$ 16.8 2.732 27.0 2.701	30 102 0 119
30.6 2.690 94.74 \$ 17.7 2.697 28.8 2.663 19.2 2.654	Sulfur (S) + Methylene iodide (CH ₂ I ₂) Rheinboldt and Schneider, 1928
19.2 2.654 27.0 2.630 31.0 2.618	\$\frac{1}{5}\$ \$\frac{1}{5}\$<
Di Ciommo, 1902-03	
% ×.10 ¹² % ×.10 ¹²	Madan, 1897
100 0.059 93.6 0.2 98.4 .118 92.2 0.2 96.7 .22 83.5 0.24 95.2 .19	sat.sol.: nj6 = 1.778
Williams, Johnson and Maass, 1935	Sulfur (S) + Iodoform (CHI ₃)
% Q diss. 25° 20°	
93.70 -405.3 -398.0	Rheinboldt and Schneider, 1928 % f.t. E % f.t. E
93.70	100.0 120 119 35.2 92.5 87 96.0 117 85 33.8 93 92 87.9 109.3 85 24.9 99 91 68.8 93.5 85 20.2 102.5 91 60.0 87 85 10.1 110.5 91 54.3 88.5 85 4.0 115.5 91 49.8 90 85 0.0 119 118 39.7 92 85

Sulfui	r (S) +	Ethylene h	promide	(C ₂ H ₄ Br ₂)	Sulfu	r (S)+	- Tetrabro	methylen	e (C ₂ Br ₄)
Etard	, 1894					Rhein	boldt and	Schneide	r, 1928	(fig.)	
%	f.t.	%	f.t	•		%	f.t.	E	76	f.t,	E
98.3 97.6 95.6 93.6	9 22 40 50	87.6 69.8 40.0	72 95 108			100 90 80 70 60 50	56 50 60 79 90 98	56 44 44 44 44 44	40 30 20 10 0	105 111 114 117 119	44 44 44 71 118
		Ethylene i				Sulfur	(S)+	Tetraiode	ţhy lene	(C ₂ I ₄)	
%	f.t.	E	%	f.t.		Rheinb	oldt and	Schneider	. 1928		
100	82.5	82	40	90	65	Kile 1 iii	f.t,	E	%	f.t,	E
90 80 70 60 50	76 70 67 75 82	65 65 65 65 65	30 20 10 0	97.5 105 112 119	65 65 65 113	100.0 90.4 79.4 69.4 49.7 43.9 40.6	189 - 137.5 104 99 102	188 97.5 95.5 95.5 95.5 95.5 95.5	36.4 34.1 29.8 20.3 10.6 0.0	102.5 103 106 112.5 116.5 119	96 98 101 101 101 118
515	(63)	Ethylidene	والمنامة		,				======	=	======
Juliui	(3)	Ethylldene	rourue	(6211412	,	1					
Rheinb	oldt and	Schneider, E	1928	(fig.)	E			- Diiodace			
100	73 68.5	73 54	% 40 30	f.t. 86.0 94.0	54 54	Rhein	boldt and	Schneide:	r, 1928	(fig.)	F
100	f.t. 73	73	% 40	f.t. 86.0	54						E 48 48 59 88 113
100 90 80 70 60 50	f.t. 73 68.5 63 56.5 68 77.5	73 54 54 54 54 54	% 40 30 20 10 0	86.0 94.0 102.5 110 119	54 54 54 60 118	Rhein % 100 90 80 70 60	78.5 72 61.5 50.5 65.5	78.5 48 48, 48,	7, 1928 8 40 30 20 10	(fig.) f.t. 88 97.5 107 102.5	48 48 59 88
100 90 80 70 60 50 Sulfur	f.t. 73 68.5 63 56.5 68 77.5 (S) +	E 73 54 54 54 54 54 54 54 Tetrachlor	% 40 30 20 10 0	86.0 94.0 102.5 110 119	54 54 54 60 118	Rhein % 100 90 80 70 60	78.5 72 61.5 50.5 65.5	78.5 48 48, 48,	7, 1928 8 40 30 20 10	(fig.) f.t. 88 97.5 107 102.5	48 48 59 88
100 90 80 70 60 50	f.t. 73 68.5 63 56.5 68 77.5	E 73 54 54 54 54 54 54 54 Tetrachlor	% 40 30 20 10 0	86.0 94.0 102.5 110 119	54 54 54 60 118	Rhein % 100 90 80 70 60	78.5 72 61.5 50.5 65.5	78.5 48 48, 48,	7, 1928 8 40 30 20 10	(fig.) f.t. 88 97.5 107 102.5	48 48 59 88

Sulfur	· (S) + C	hlorbenze	ne (C ₆	H ₅ C1)		Sulfu	ır (S)	+ p-Diiod	obenzene	(C ₆ H ₄ I ₂)
Alexeev, 1336						Rheinboldt and Schneider, 1928 (fig.)					
76	sat.t.	76	sat.	t		%	f.t.	E	78	f.t.	E
87.85 75.08 67.03 56.95	85 106.5 116 116	44,67 39,93 31,73 18,84	110 103 93 67	3.5		100 90 80 70 60 50	129 126 119 112 106.5	129 91 91 91 91 91	40 30 20 10 0	92 99.5 107 112.5 119	91 91 91 91 118
Timmer	mans and K	ohnstamm.	1909-1	10							
I	Timmermans and Kohnstamm, 1909-10 C.S.T. limits of pressure dt/dp 117.0 5 - 85 Kg/cm ² -0.025							Hexaiodol	benzene ((C ₆ I ₆)	
						Schnei	der, 192	3			
						%	f.t,	E	%	f.t.	E
	and Pelezz			(C ₆ H ₄ C1 ₂)	90.0 80.0 50.0 20.0	122 177	114 114 114	10.0 4.0 0.0	134 117 119	114 114 -
%	f.t.	E	%	f.t.	<u>-</u> -	====					
0 5 10 20 25 30 40	113 107.2 101.4 99.05 98.4 97.4 96.5	49.8 49.3 50.8 50.4 50.7	60 70 80 85 90 95 97	97.1 94.6 86.6 79.6 67.8 51.5 52.2	50.7 51 51.2 51.2 51.5 51.5			bis-β-Chl			ьH ₈ C1 ₂ S)
50 55	96.9 96.8	50.4 50.7 50.7 50.7	99 100	52.6 52.9	51	- % 	f.t.	%	f.t,		
	ow and Peli	ikh, 1929	s	at.t.		100 99.9 99.7 99.3 99.1 98.52 97.56	13.82 13.79 13.75 13.70 13.66 24.0 43.0	80.00 79.0 74.82 69.00 68.00 65.0 60.0	102.5 103.0 110.9 120.0 124.0 127.0 133.5	L ₁ +L	2
89.39 75.00 54.02	67 86 104	25.03 20.14 16.34	1	02 99.5 88.5		96.62 95.69 93.90 92.40 90.91 88.70 83.34 82.50	54.0 65.0 74.0 79.0 85.0 90.0 99.0	40.0 22.0 15.0 13.0 10.0 6.0 0.0	143.0 135.0 124.9 117.0 105.0 108.0 114.0	11 11 11	

Sulfur (S) + Aniline (C ₆ H ₇ N)	Sulfur (S) + Diphenylamine ($C_{12}H_{11}N$)				
Alexeew, 1886	Hrynakowski and Adamanis, 1934				
% sat.t. % sat.t.	mol% f.t. E min.				
92.89 104 49.58 133 90.3 114 47.49 131 89.42 116.5 37.58 123 79.7 135 29.46 111 78.72 138 23.00 98 68.25 137 14.10 72	70.3 51.0 51.0 3.3 63.1 65.0 50.5 3.9 51.8 77.5 49.0 3.0 43.1 87.0 48.0 2.5 36.3 93.0 51.0 2.5 30.7 96.5 47.0 2.3 26.0 99.0 45.0 2.3 22.1 100.5 48.0 2.3 18.8 101.5 50.5 2.0 15.9 102.5 48.0 1.7 11.2 104.5 51.0 1.5 9.3 105.5 51.0 1.5 7.5 105.5 51.0 1.5 7.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 51.0 0.5 4.5 105.5 5 51.0 0.5				
Sulfur (S) + Methylaniline (C ₇ H ₉ N)	26.0 99.0 45.0 2.3 22.1 100.5 48.0 2.3 18.8 101.5 50.5 2.0 15.9 102.5 48.0 1.7 11.2 104.5 51.0 1.5 9.3 105.5 51.0 1.5 7.5 105.5				
Zhuravlev, 1940	3.2 105.5				
% sat.t. % sat.t.	1.9 111.0				
9.7 34.0 44.3 104.8 14.9 96.7 55.0 98.5 23.7 105.7 63.9 88.3 33.5 106.8 70.2 77.2	0.0 117.0				
Sulfur (S) + Dimethylaniline ($C_8H_{11}N$)	Sulfur (S) + α -Naphthylamine (C ₁₀ H ₉ N) Hrynakowski and Adamanis, 1934 mol% f.t. E min.				
Zhuravlev, 1940	100 50				
% sat.t. % sat.t.	84.8 46.0				
16.0 80.0 45.8 86.2 25.0 88.2 59.0 74.5 35.5 88.9	66.9 64.0 44.0 3.0 56.0 74.0 43.0 3.0 47.3 81.0 45.0 2.7 40.2 88.5 46.0 2.5				
Sulfur (S) + o-Toluidine (C7H9N)	21.5 99.5 45.0 0.5 18.3 101.0 43.5 1.5 15.5 102.5 44.5 0.5 13.0 103.5 46.0 0.5 10.8 104.5 46.0 0.8				
Zhuravlev,1940	8.8 106.5 46.5 0.5 7.0 108.5 46.0 0.3				
% sat.t. % sat.t.	5.3 110.0 47.0 0.3 3.8 112.0				
8.5 80.0 47.5 119.7 10.3 100.0 58.5 111.8 18.8 117.8 66.9 100.6 27.7 122.2 74.0 86.4 36.6 122.4	2.4 114.0				
00,9					

Sulfur (S) + β -Naphthylamine (C ₁₀ H ₉ N)	Sulfur (S) + Quinoline (C ₉ H ₇ N)			
Krupatkin, 1953	Hammick and Holt, 1926			
% f.t. sat.t. % f.t. sat.t.	% f.t. % f.t.			
0.00 112.0 - 49.86 101.5 -	monocl.			
13.00 107.0 - 60.00 102.5 99.0	100 -18.97 67.2 96.5 86.2 +74.5 67.05 96.0			
30.00	80.2 85.8 58.1 98.5			
35,00 100,0 E - 75,05 - 100,5 40,35 101,0 - 80,30 103,0 100,0 48,50 - 96,5 100,00 117,0 -	74.1 93.2 50.5 99.5 72.65 93.8 50.3 99.5			
C.S.T. 75,05% 100,5°	71.3 94.2 34.7 100.0 69.6 94.6 14.8 101.0			
	% f.t. % f.t.			
Sulfur (S) + Pyridine (C ₅ H ₅ N)	76.0 88.75 Fhomb. 50.5 101.1 74.1 91.0 43.0 101.4			
Surface (S) (Tyridine (Canan)	67.2 96.0 33.25 101.8 64.2 97.1 26.2 102.0			
Pingham 1007	61.0 98.5 21.0 102.3 58.1 99.2 20.2 102.5			
Bingham, 1907	54.6 100.9 9.6 104.7 53.2 100.6 2.2 111.5			
C.S.T. 150	% sat.t. % sat.t.			
	immediately			
Hammick and Holt, 1926	72,65 60.0 43.0 94.8 67,2 72.6 39.1 95.2 64.2 78.0 34.7 96.0 61.0 82.5 33.7 95.5-96.2 58,5 85.0 33.25 96.5 58,1 85.5 26.2 94.8			
% f.t.	61.0 82.5 33.7 95.5.96.2 58.5 85.0 33.25 96.5			
	54:0 69.4 41.0 90.0			
89,95 84,5 rhomb. 86,65 91,5	53.2 90.2 20.2 92.6 50.5 91.6 19.5 91.9			
86,65 91,5 84.1 95,2 83.1 97,5	50.3 91.6 14.8 85.4 44.6 94.3 9.6 70.0			
80.8 101.0 monocl. 2.0 110.0	44.5 94.5			
	after heating for several hours at 90°			
% sat.t. % sat.t.	50.5 91.8 20.2 94.6 50.3 91.8 19.5 94.3			
86.65 80 41.0 160.5	33,25 97,5 14.8 87,7 26,2 97,6 9,6 72,0			
80.80 98 30.0 161 75.35 116 20.3 156				
[61.4 144 11.5 132.5				
61.1 144 10.0 137 49.3 157 8.06 127				
	Sulfur (S) + Allyl isothiocyanate ($C_{u}H_{5}NS$)			
	Alaman, 1997			
	Alexeev, 1886 % sat.t. % sat.t.			
	89.31 90.5 56.72 124 85.86 103.5 45.10 117 73.75 122.0 27.18 81.5			
	73.75 122.0 27.18 81.5			

Zhuravlev, 1940	Sulfur (S) + Benzoic acid ($C_7H_6O_2$)
% sat.t. % sat.t.	Hammick and Holt, 1927
9.4 80.0 47.5 123.2	% sat.t. l* sat.t. 2* sat.t. 3*
13.2 100.0 46.5 115.3 20.2 116.8 66.6 97.4 26.9 123.9 73.4 80.0 36.5 125.5	1.89 145 2.00 151 183 219 2.03 154.5 173 225 2.20 156 170 235 2.30 159.5 167.3 - 2.40 161.5 165 242 2.49 257.5
Sulfur (S) + Diphenyliodinium-triiodide	% sat.t. 3* % sat.t. 3*
($C_{12}H_{10}I_{1}$) Rheinboldt and Schneider, 1928 (fig.)	74.5 220 81.8 168.5 75.7 215 83.1 160.5 79.6 182 84.9 149.5 80.75 175 89.65 117
% f.t. E % f.t. E	80.75 175 89.65 117 sat.t. 1*: The liquid becomes homogeneous.
0 138 138 60 125 117 10 136 117 70 123 117 20 133 117 80 121 117	2*: " " separates in two layers . 3*: " " becomes again homogeneous .
30 131 117 90 119 117 40 129 117 100 119 118 50 127 117	Nitrogen (N ₂) + Methane (CH ₄)
	700
Sulfur (S) + Benzoyl chloride (C_7H_5OC1)	Fedorova, 1939
•	100 -183.2 - 47 -200.2 -210.1
Boguski, 1905	89 -185.0 -192.2 45 -201.8 " 85 -186.2 -193.2 40 -204.6 "
% sat.t. % sat.t.	70
99.01 0 59.96 121.4 98.22 17 50.29 130	50 -199.8 -210.1
97.43 35 43.80 134.2 96.36 46.1 27.77 134.2	Keyes and Burks, 1928
93.85 63.3 19.93 130 90.12 78 14.98 121.4	vol. P
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	(cc/g) 0° 50° 100° 150° 200°
Sulfur (S) + β-Naphthol (C ₁₀ H _B O)	30,44% 30 31,640 33,172 44,664 51,126 57,591 25 37,756 45,711 53,634 61,513 69,381 20 46,812 56,993 67,146 77,220 87,281 15 61,681 75,810 89,886 103,823 117,737 12 76,349 94,723 113,010 131,113 149,225 10 90,952 113,864 136,643 159,246 181,658 8 112,929 143,254 173,483 203,305 233,066
Smith, Holmes and Hall, 1905	6 150,927 195,529 239,853 283,615 327,443 68,99%
I II 74.63 118.0 67.20 134.5 68.20 132.5 50.66 157.0 62.77 143.5 45.59 160.5 58.72 149.5 40.80 162.5 54.32 154.0 35.93 164.5	29.946 37.700 45.994 54.227 62.424 70.592 24.946 44.662 54.814 65.036 74.920 84.913 19.946 54.823 67.948 80.913 93.821 196.684 14.942 71.113 89.484 107.710 125.792 143.701 11.946 86.974 110.899 134.726 158.570 182.031 9.946 102.359 132.464 162.645 192.505 222.069
54.32 154.0 35.93 164.5 32.29 163.0 29.58 163.8 27.42 163.8 25.00 163.0	40 28.868 34.972 41.038 47.075 53.084 35 32.750, 39.811 46.321 53.803 60.738 30 37.843 46.220 54.514 62.773 70.938 25 44.819 55.089 65.260 75.360 85.414 20 55.002 68.262 81.353 94.371 107.308 15 71.298 89.910 108.283 126.483 144.608 12 87.003 111.450 135.606 159.515 183.313 10 102.360 133.203 163.655 193.779 223.800

Nitrogen	(N ₂) + F	Ethane (C;	₂ H ₆)		Eakin.	Ellingt	on and Gami	, 1955		
ł							P	t		P
Reamer, S	Selleck and	l al., 1952 al volume)	t	Dew point	Bubble point		Dew point	Bubble point
1	4.5°	71°	138°	204°			95.0	2%		
		72,67 mol			-121.7 -103.9 -84.4	- - -	10.83 13.44 16.26	+11.1 +14.83 +18.9	36.43	46.29 50.64
13.6 27.2	1538	1998 958	2435 1194	2853 1413	-62.2 -45.6	-	19.92 23.53	$^{+21.1}_{+23.3}$	42.94	53.73
40.8 54.4	-	610 437	781 574	934 696	-44.33	7.12	-	+25.6 +27.8	47.48	54.56
68.1	-	333	451	552	-28.9 -17.8	$\frac{11.53}{15.86}$	28.35	+27.81	50.40	-
85,1 102	-	252 200	353 292	438 363	-12.2 - 6.7	21.39	34 <u>.</u> 36	+28.30 +28.61	$53.65 \\ 54.17$	-
119 136	- 79,4	$\substack{166.4\\143.6}$	245 212	310 270	+ 5.56	29.17	46.29	+28.97	no sep	aration
170 204	73.8 70.4	$\frac{116.5}{101.9}$	169.3 143.4	182.7 142.4	+ 3.30	27.17	84,9	9%		
272	66.0	86.7	114.0	120.3	-171.34	_	7 20	-23.3	15.79	
340 408	$\substack{63.2\\61.0}$	$\begin{array}{c} 78.6 \\ 73.8 \end{array}$	98.7 89.2	106.4	-156.1 -140.3	-	13.79 20.80	-18.0 -12.2	21.67	63.47
544 680	$\substack{58.1 \\ 55.9}$	67.7 63.7	78.3 77.7	81.1	-120.0	-	31.79 38.23	- 5.22 - 3.9	27,19	67.38
					-103.9 -90.0	-	43,20	+ 2.8	32.53	-
12.4	1595	47.56 mol	•	2070	-90.0 -73.3	-	$43.41 \\ 48.10$	+ 4.38 +10.0	40.62	69.90 70.08
$\frac{13.6}{27.2}$	7 58	2035 999	2460 1220	2878 1436	-73.3 -56.7	5.26	48.20 52.80	+12.2 +14.84	- 45.40	70.30 70.03
40.8 54.4	479 340	652 479	808 602	956 715	-45.6 -44.1	7.70	56.38	+18.9 +21.1	51,74	-
68.1 85.1	256 192	377 296	479 356	571 458	-43.2	-	56.43	+21.1	56.92 63.70	-
102 119	153.1 127.9	243 207	319 271	382	-42.8 -34.4	11.17	56.75 -	+21.73 +21.73	$\frac{60.43}{61.13}$	· -
136 170	112.3	179. 7	237	329 287			79.	98%		
204	94.2 83.8	$144.3 \\ 122.8$	191 161.4	198 153.1	-175.7 -171.4	-	5.99* 8.07*	-134.5 -111.4	-	31.80 45.76
272 340	72.8 66.6	98.8 86.0	126.6 107.0	127.7 111.7	-162.3	-	12.98	- 93.2	-	53.83
408 544	62.8 58.0	78.1 68.9	95.2	92.6	-151 .1	-	19.89 75.	- 80.2	-	58,28
680	54.8	63.3	80.5 77.9	81.3	-162.3	_	14,29*	-117.0	_	52.92
		26.82 mol	K		-162.3 -156.1 -140.3	-	19.42 33.50	-102.1	-	61.82
13.6 27.2	1629	2057	2472	2884			75	•		
27.2 40.8	754 516	1020 669	1234 821	1446 966	-116.7 -101.4	-	52.42 61.88	-20.6 - 6.76	-	86.91 87,77
54.4 68.1	375	502 399	616 493	966 725	-89.7 -77.2	-	67.80 78.01	+ 1.25 + 9.50		86 10
85.1 102	297 232	318	368	581 468	-52.4 -35.1	-	80.40	+11.15	78.38	r <u>-</u>
119	191 162	265 225	332 284	392 338	-35,1	-	84.50	+12.42 31 %	75.47	-
136 170	141.4 114.7	199 160.9	250 202	297 205	-150.1	_	26.49*	-28.9	17.30	_
204 272	$\frac{99.1}{81.1}$	$136.5 \\ 107.8$	$171.6 \\ 134.0$	159.0 132.5	-140.3 -132.8	-	40.44 41.69	-17.8 - 3.9	24.58 38.25	-
340 408	71.6 65.7	92.1 82.2	112.5	115.1	-120.0 -103.9	-	61.88 74.88	+ 8.9	62 52	-
544	58.7	70.3	$\begin{array}{c} 98.9 \\ 82.3 \end{array}$	94.2 82.0	-101.1		76.57	+ 8.9 + 9.4	76.80 ¹ 67.22 68.61 ¹	
680 N.B. The	54.3 authors g	63.5 ive also di	78.5	- 0 1040	- 62.2 - 51.1	$\frac{5.41}{8.11}$	-	+ 9.4	68.61	
	°, 238°.	., a a 130 Q	4 2 4 1 0 1 9 9	, 104*,	}		50.	18%		İ
					-63.3 -56.7	$\frac{6.65}{9.98}$	-	$-17.8 \\ -10.0$	$\frac{40.96}{58.19}$	-
					-45.6 -34.4	15.54 23.32	<u>-</u>	- 9.1	63.33	-
					-26.1	30.10	-	- 8.2	71.38	-
				:	r = ret	trograd	dew point			
					* = two	liquid	phases .			

	84.99%
t P t P	43,33°
Dew Bubble Dew Bubble point point point	184 165 12 0927 0 50810
30.00%	129.783 10,3139 .48451 101,633 8,5422 .45811
-80.4 5.7242.8 32.30 -	84,405 7,2074 47229
-73.2 7.9830.6 78.13 - -56.7 17.02 -	74, 244 5, 3265 53676 58, 369 3, 4718 64735
15,03%	33,982 1,6141 .81064
$-147.6 120.82_{\pi}^{\Gamma} - -95.7 116.75_{\pi}^{\Gamma} -$	32.22°
$\ -1401 00 00^{1} - -734 11347^{1} - \ $	262.071 13.8577 0.75467 154.994 12.0989 .51121
# -135.3 95.18*67.9 106.25° -	106.988 10.3262 .41345
	85.710 8.5540 .39984 76.177 7.2211 .42097
-121.1 100.22r60.0 43.28114.0 105.75r57.9 55.68 -	65.949 5.3521 .49172 53.492 3.4824 .61413
-105.5 112.02 ^r	32.144 1.6159 .79382
4.10 %	21,11°
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	216,392 13,8691 0,64612 122,972 12,1125 ,42043
$\begin{bmatrix} -140.6 & 43.23 \\ -140.2 & 44.10 \end{bmatrix}$ - $-92.7 & 70.78$	122,972 12,1125 .42043 85,136 10,3420 .34362 70,570 8,5704 .34099
-129.1 64.27r88.7 53.051118.3 73.10r88.5 42.85 -	48. 72 0 3.4896 .5 7 818
	30.287 1.6178 .77528 10.01°
1.98% -162.7 - 11.59 -128.2 6.87 -	170.359 13.8822 0.52812
-156.1 - 20.84 -127.6 54.96 -	91.541 12.1308 .32475 28.409 1.6199 .75473
-151.1 - 26.66 -123.6 56.66 - -146.7 - 32.60 -122.2 11.36 -	1.67°
-141.8 - 38.93 -120.0 56.43 - -141.5 39.39116.8 17.69 -	136.982 13.8934 0.43718
-140.3 40.88113.3 50.53134.5 48.97 -	_12 .22 °
	79.994 13.9235 0.26831
r = retrograd dew point	70.27%
P d(moles/1) compressibility s	43,33°
dimotes/1/ complessibility factor	237,520 12,2023 0.74949 175,401 10,4529 .64611
95.03% 43.33°	136,996 8,7047 .60599 111,037 6,9845 .61212
	li 89.426 5.2794 .65221
294.148 14.0856 0.804079 157.254 12.32410 .491308	66.732 3.5521 .72337 39.494 1.8252 .83315
90.8274 9.98705 3501769 72.2033 7.64854 3634849	32,22°
62.5136 5.3160 .4527907	302,490 13,9385 0,86601 207,539 12,2136 ,67808
53.1505 3.56420 .574186 35.6696 1.81889 .755091	153,681 10,4644 ,58605
32.22°	121.502 8.7173 .55620 99.687 6.9935 .56881
242.025 14.1010 0.684916 121.033 12.3408 .391370	99.687 6.9935 .56881 81.662 5.2888 .61615 62.058 3.5581 .69600
69.339 9.99998 2766980	37.459 1.8273 .81804
58.9208 7.68396 3059927 53.9739 5.3342 4037774	21,11°
48.1492 3.57348 .537681 33.48530 1.821600 .733548	262,480 13,9505 0.77932
21.11°	178,096 12,2261 .60336 132,526 10,4764 .52396
190.208 14.1165 0.557987	106.117 8.7288 .50355 88.500 7.0070 .52314
85.506 12.3601 .2864818 31.2806 1.824045 .710169	1 73.877 5.2988 .57749
10.010	48.720 3.4896 .57818 35.431 1.8294 .80220
138.386 14.1261 0.421286	
51.3677 12.41310 0.1780867 -6.62°	
61.9080 14.1784 0.1996296	
0,1770270	

29,96%	
32,22° 288,452	
21,11° 262,888 11,3503 0,95915 208,465 9,6072 89858 164,848 7,8611 86841 127,286 6,1216 86107 92,712 4,3853 87551 57,941 2,6340 91095	
10.01° 241.397	
-6.62° 210.397 11.3803 0.84526 162.692 9.6335 .80060 135.363 7.8822 .78516 106.478 6.1381 .79311 79.219 4.3969 82374 50.694 2.6404 .87779 29.661 1.4661 92407	
-23,33° 178.743	
111,500 7,9004 0,70391 89,398 6,1535 ,72477 -34,44° 157,866 11,4127 0,70612 128,695 9,6605 ,68005 105,491 7,9048 ,68125	
25.905 1.4695 .89989 -45.56° 137.350 11.4258 0.64363 115.174 L. + L.	
24.394 1.4708 0.88802 -56.67° 122.455 L ₁ + L ₂ 106.526	
21.856 1.4725 0.83551 -62.22° 117.447 L ₁ + L ₂	
104.695 L ₁ + L ₂	==

Nitrogen (N_{R}) + Propane ($C_{\text{3}}H_{\text{B}}$)

Watson, Stevens and al., 1954

P Kg	PV/RT	P Kg	PV/RT
	126.	15°	
	0.1	%	
254.6 160.2 104.5 67.8 44.6	1,138 .078 .046 .029 .019	29.8 19.5 12.9 8.57 6.18	1.011 .009 .005 .003 .001
202.2	1.024	34.4	0.961
282.2 166.7 110.6 75.2 50.9	0.910 .908 .929 .944	29.1 15.5 10.4 6.95	.974 .981 .990 .996
	51.6	•	
237.2 145.5 97.8 68.0 46.5	0.940 .868 .877 .909 .943	31.6 21.35 14.25 9.50	0.964 .978 .985 .988
	78.9	9 %	
264.4 126.0 88.0 64.9 46.8	0.943 .670 .704 .782 .847	33.2 23.07 15.57 10.48	0.906 .947 .964 .976
	148.	.90°	
	31.9	76	
429.5 246.2 156.2 104.4 70.2 47.2	1.168 1.002 0.959 .953 .960	32.0 21.52 14.41 9.64 6.48	0.979 .986 .991 .995 .997
	71.	3 %	
422.7 192.3 124.5 88.1 63.1	1.116 0.761 .736 .781 .837	44.7 31.0 21.33 14.44 9.66	0.886 .921 .947 .964 .976
424.6	83.4 1.090	•	0. 820
165.8 108.6 79.8 59.0	0.637 .624 .688 .762	42.9 30.3 21.22 14.54 9.78	0.829 .880 .916 .944 .960

Nitrogen (N_2) + Butane (C_4H_{10})

Akers, Attwell and Robinson, 1954

mol	%	
L	V	
38°		
96.06 91.01 80.45 73.12 61.61 45.51 93.5°	13.89 10.25 10.92 11.21 13.28 20.04 27.61	
93.18 78.29 61.32 45.70 126.5°	20.25 15.67 20.88 24.91 27.65	
98.94 84.62 72.58 53.22 149°	49.16 32.61 28.27 32.66	
83,50 78,33 72,24 62,47	62.38 52.71 50.27 51.00 47.53 45.14 45.58 45.15 45.71 46.39	
	L 38° 96.06 91.01 80.45 73.12 61.61 45.51 93.5° 95.02 87.18 78.29 61.32 45.70 126.5° 98.94 84.62 72.58 53.22 149° 83,50 78.33 72.24	L V 38° 96.06 13.89 91.01 10.25 80.45 10.92 73.12 11.21 61.61 13.28 45.51 20.04 - 27.61 93.5° 95.02 33.36 87.18 20.25 78.29 15.67 61.32 20.88 - 24.91 45.70 27.65 126.5° 98.94 49.16 84.62 32.61 72.58 28.27 53.22 32.66 149° - 62.38 - 53.71 - 50.27 - 51.00 83.50 47.53 - 45.14 78.33 45.58 72.24 45.15 62.47 45.71

Nitrogen ($N_{\mbox{\tiny 2}}$) + Heptane ($C_{\mbox{\tiny 7}}H_{\mbox{\tiny 16}}$)

Boomer, Johnson and Piercey, 1938

t	mol%	5	d	
	L	V	L	V
25 55 85 115	88.0 87.2 86.04 85.02	1.04 1.76 2.44 5.05	9.673 .653 .625 .593	0.0993 .109 .101 .098

					Ni tananan (N N Pakula	(C H)	
					-	N ₂) + Ethyle		
Akers,	Kehn and mo		1954 d	· · · · · · · · · · · · · · · · · · ·	 Hagenbach a P	nd Comings, PV/RT	1953 P	PV/RT
1 kg	L	V	L	v	 <u> </u>		07°	
50	02.0	32	0.668	0.078		0		
72.4 107.2 124.7 124.7 142.1 161.8 187.8 212.4 234.0 247.8 282.4 353.3 423.9 564.9 704.8	92.0 87.2 85.5 84.9 84.8 83.0 79.9 75.6 76.4 73.4 68.2 63.7 56.3 49.5		0.667 0.657 0.670 0.671 0.666 0.663 0.650 0.656 0.663 0.671 0.666 0.692 0.692	0.137 0.137 0.152 0.174 0.201 0.227 0.249 0.251 0.282 0.333 0.375 0.445 0.505	11.808 12.633 13.718 19.923 22.408 23.085 24.425 25.284 26.104 45.543 49.910 52.560 56.154 57.617 61.728	1.0001 .0001 .0001 .0003 .0005 .0005 .0006 .0006 .0007 .0024 .0030 .0034 .0040 .0042	84.191 86.483 94.502 95.0110 103.893 112.459 118.376 130.696 155.173 197.07 226.04 250.89 253.16 303.49 378.42 531.12	1.0104 .0111 .0137 .0138 .0171 .0210 .0247 .0291 .0419 .0685 .0897 .1097 .1129 .1571 .2303 .3943
71.7 148.4 212.4 283.1 423.9	90.4 81.3 75.3 70.9 56.7	1.78 1.18 1.31 1.54 2,43	0.635 0.643 0.639 0.631 0.636	0.0716 0.142 0.190 0.271 0.354	76.693 1.245	.0083 20. 0.9993	659,39 .4 % 63,456	.5391 0.9763
74.5 142.1 212.4 283.1 459.4 529.0 529.0 562.8 633.1	88.4 78.7 69.9 61.3 36.6 27.9 28.9 27.7 24.7	4.08 5.88	0.641 0.605 0.505 0.597 0.591 0.583 0.586 0.542 0.526 0.548 0.549 0.522	0.431 0.449 0.0689 0.130 0.164 0.238 0.361 0.401	3.948 10.249 10.799 12.441 14.575 17.365 18.022 20.249 22.053 33.962 39.089 44.749 45.744 56.498	.9978 .9945 .9942 .9934 .9924 .9910 .9907 .9889 .9882 .9824 .9806 .9803	69.106 87.537 100.97 103.61 118.67 148.12 167.87 184.64 213.62 254.20 314.48 439.40 546.96 655.74	.9754 .9744 .9744 .9745 .9765 .9841 .9917 .0007 .0202 .0529 .1108 .2532 .3868 .5255
79.5 177.2 247.8 247.8 283.1 316.0 444.5	87.2 67.0 55.8 57.2 44.6 24.8	6.47 5.14 4.96 4.59 6.31 8.20	0.546 0.507 0.495 - 0.464 - 0.417	0.0666 0.144 0.201 0.191 0.231 0.321	 1.213 3.990 5.346 9.736 10.463 12.041 14.086	0.9985 .9951 .9934 .9882 .9873 .9854 .9830	55.115 61.631 66.885 79.312 90.811 93.294 105.77	0.9410 .9356 .9315 .9230 .9165 .9153
					17.379 17.389 19.498 21.202 22.408 33.626 38.568 41.600 44.936	.9792 .9792 .9768 .9749 .9736 .9615 .9564 .9534 .9502	130.19 146.44 160.11 184.16 217.13 267.10 374.15 470.70 572.64	.9047 .9060 .9075 .9174 .9381 .9840 1.1130 .2449 .3894

P	PV/RT	P	PV/RT	Nitroge	n (N ₂) +	Benzen	ie (C	₆ H ₆)	
	59.9								
4.104 5.223 10.176 10.275 11.694 13.656 16.797 17.646 18.809 20.430 23.241 33.569 38.311 42.434	0.9912 .9888 .9782 .9780	59.836 64.611 77.911 88.305 90.216 101.53 122.92 138.23 149.23 169.88 200.48 249.71 370.62 495.80 640.96	0.8797 .8715 .8503 .8358 .8334 .8195 .8010 .7952 .7933 .7968 .8156 .8663 1.0381	t	and Luke mol% L 75 at 95.50 95.50 95.50 1 95.50 1 95.50 2	V m.	t 100 125 150 175 200	94.05 94.05	
44.352 53.851	.8905	010170	.4644	Miller	and Dod	ge, 194	0		
1.197	80.2 0,9961	49.720	0.8324	p	mo	1 % (L)		p	mol % (L)
4.037 9.491 10.131 11.622 13.538 16.588	.9868 .9689 .9668 .9618 .9554 .9453	54.766 58.719 66.349 74.089 83.652 98.464	. 8152 . 8019 . 7767 . 7523 . 7243	120.7 218.1		4.91 1.655	30°	297.5	89,49
17.092 18.527 20.082 31.872 36.147	.9436 .9436 .9387 .9335 .8935 .8789	98,464 107,70 139,29 162,61 203,61 322,86 467,86	.6884 .6995 .6411 .6490 .6930 .8873	61.3 109.0 155.5	94 94 91	6.55 4.02 1.835	100°	208,0 252.2 298.4	89.38 87.35 85.42
37.868 41.504	. 8730 . 8605	467.86	1,1433	61.9 106.3 155.5	96 93 96	6.04 3.37 0.55	125°	198.3 269.0 301.6	88.35 84.50 82.50
	d Melster, 1930			63.6 103.6 151.4 2 01.5	92 81 86	5.70 2.89 9.63 6.12		201.5 251.0 303.1	86.21 82.84 79.56
mo1%	6.9° 126.9°	n 226.9 °	276,9°	297.0	150.0°	6.04			
0 1' 8.00 1'	7.81 21.90	25,60	27.27	р	mo.	1 % (V)		p	mol % (V)
24.05 1. 41.94 1. 56.95 1 76.21 1 85.93 1	7.81 21.90 7.15 21.03 5.74 19.56 4.17 17.85 3.08 16.55 1.69 14.91 1.10 14.30 0.33 13.43	24.64 22.92 21.00 19.63 17.86 17.14 16.22	26.36 24.53 22.54 21.08 19.21 13.48 17.53	61.3 109.0 155.5	2 1 1	.453 .978 .952	5.0° 00.0°	208.0 252.2 298.9	2.047 2.233 2.453
	d Rosevear , 19 second virial (Amagat u	42		61.9 97.5 98.2 106.3 151.2 152.8 155.5 198.5	3 3 3 3 3 3	.66 .785 .70 .735 .555 .50 .47 .463 .617	25.0°	232.6 243.3 251.5 274.4 286.6 294.7 302.6 307.8 314.5	3.685 3.73 3.745 3.90 3.945 4.10 4.04 4.14 4.055
25° 41.83	-24.4			63.6 103.6 151.4 197.3	6 5	.32 .53 .94 .90		201.5 251.0 303.0	6.055 5.91 6.09

Nitrogen (N_2) + Carbon oxide (CO)	t P t P
-	
Verschoyle, 1931	145 5 11 30 185 9 2 44
t p t p	-166, 8 10, 37 -186, 2 2, 36 -168, 4 8, 70
L + V	24.0mo1% 19.1mo1%
19.9% 40.05%	_154.5
-193.88 884.0 -193.90 813.3 -198.13 532.5 -198.13 489.0	-163.5 13.68 -168.31 10.22 16.6mol%
-203.07 270.2	_177.6 4.58 188.71 2.11 _160.81 16.30
_193.90 742. 5 _193.90 658.8	-164.10 13.58 16.0mo1% -167.5 11.03
_198, 12	-172.71 7.26 150 95 16.75 188.3 2.13
	-164.8 12.75 -170.2 8.70
76 t p	-170.7 8.85 -181.2 4.05
L + C	-181.9 3.80
19.9 -209.12 100.4 40.05 -208.145 108.4 60.0 -207.12 112.2 79.95 -205.98 119.4	
60.0 -207.12 112.2 79.95 -205.98 119.4	n 1 100m
	Ruhemann, 1935
t p t p	% f.t. m.t. % f.t. m.t.
sat.sol. -185.44 1431.45 -205.01 114.95	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
-188.06 1100.9 -205.03 114.86 190.865 813.15 207.43 70.42	17.4 209.15 209.45 70 206.15 207.65 25 208.85 209.50 74.6 206.10 207.05 30 208.30 209.10 79.8 205.80 206.75 40 207.40 208.45 90 205.25 205.80 49.3 -207.55 -208.30 100 -204.95 -204.95
-192.07 709.0 -210.815 32.99 -193.955 566.0 -212.785 19.81	30 208,30 209,10 79,8 205,80 206,75 40 207,40 208,45 90 205,25 205,80
- 196,55 407,75 - 215,70 8,88 - 199, 325 279, 15 - 218,839 3, 26	49,3 -207.55 -208.30 100 -204.95 -204.95
-202,27 180,09 -218,370 3,25 -204,96 116,05	% tr.t. % tr.t.
	begin, end begin, end
Steckel, 1935	30 230,75 227.85 59.65 - 219.55
t P t P	40 228.45 225.35 74.6 218.75 216.55 50 -225.35 -222.35 90 -214.95 -213.35
89.0mo1% 79.0mo1%	
-159.5 14.12 -161.3 13.10	
-162.1 12.21 -166.8 10.00 -164.0 10.79 -170.6 7.18 -165.9 9.53 -177.5 4.22	Trautz and Melster, 1930
-109.1 7.72 65 0mold	% n (V)
-171.9 6.52 55.78851# -178.8 3.78 -184.2 2.53	26.9° 176.9° 226.9° 276.9°
-184.7 2.27 -188.8 1.61	0 17.81 21.90 25.60 27.27
59.7mol% 58.2mol%	18.46 17.82 21.86 25.60 27.21
-159.5 15.58 -183.8 2.48	39,79 17,81 21,83 25,58 27,19 65,68 17,75 21,91 25,49 27,22
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	77.80 17.78 21.84 25.51 27.21 83.71 17.74 21.84 25.51 27.19 100.00 17.76 21.83 25.48 27.14
-178.7 4.40	100,00 17.76 21.83 25.48 27.14
-188.5 1.83	
,	

	P PV/RT 25° 50° 75° 100° 125°
Nitrogen (N_2) + Carbon dioxide (${\tt CO}_2$)	25.13mo1%
Trautz and Emert, 1926	30 0.9696 0.9805 0.9874 0.9925 0.9963 50 9524 9698 9814 .9895 9957 75 9349 9593 9757 9880 9968 100 9222 9527 9734 9889 1,0000
p excess pressure (by mixing)	125 .9149 .9497 .9743 .9921 .0051
22°	175 .9174 .9562 .9853 1.0053 .0204
751 0,375 50 vol%	200 .9269 .9652 .9952 .0155 .0307 225 .9409 .9786 1.0071 .0271 .0424 250 .9583 .9944 .0208 .0409 .0553 300 1.0011 1.0329 .0550 .0718 .0848
Fuchs, 1918	350 0.546 0.762 0.940 1.078 1.183 400 1.140 1.267 1.386 1.488 1.555 450 1.742 1.833 1.872 1.927 1.961 500 2.372 2.373 2.383 2.379 2.374
vol% Dv (in %) vol% Dv (in %)	
19.5° 716mm 10 +1.025 60 +2.41 20 1.96 70 2.00	Pfefferle jr., Goff and Miller, 1955
30 2.49 80 1.46 40 2.72 90 0.81	compressibility constants at 370
50 2,615	mol% B.104 C.106 b.104 c.106 (atm,-1 (atm,-2) (atm,-1) (atm,-2)
	(atm. (atm. ") (atm. ") (atm. ")
Edwards and Roseveare, 1942	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
mol% second Virial coefficient B ₁₂ (Amagat units . 13 ⁴)	0 -1.68 +2.490
25°	$Z = 1 + Bp + Cp_2$ and for mixtures rich in CO_2 :
48.13 -21.2	In Z = b (RT/v) + c (RT/v) ² + d (RT/v) ³
Haney and Bliss, 1944	Nitrogen ($ m N_2$) + Carbon tetrachloride ($ m CCI_4$)
P PV/RT 25° 50° 75° 100° 125°	Dean and Walls, 1947
50.48mo1% 30 0.9331 0.9521 0.9656 0.9748 0.9827 50 .8903 .9226 .9446 .9600 .9725	Solubility of N_2 at 25°: 0.15 cc in lg. $CCl_{t_{i_1}}$
75 8403 8888 9210 9440 9615 100 7964 8593 9012 9309 9530 125 7624 8360 8860 9212 9475 150 7413 8201 8762 9147 9444 175 7340 8131 8722 9123 9444 200 7403 8151 8726 9143 9445	Nitrogen (N ₂) + Methyl alcohol (CH ₄ 0)
225 .7533 .8228 .8776 .9208 .9538 250 .7715 .8360 .8871 .9291 .9619 300 .8269 .8738 .9174 .9549 .9848	Krichevski and Lebedeva, 1947
350 .8878 .9246 .9580 .9880 1.0150 400 .9531 .9787 1.0039 1.0267 .0504 450 1.0204 1.0370 .0548 .0736 .0919	P cc N ₂ / 1 g CH ₄ 0 0° 25° 50° 75°
500 .0581 .1001 .1120 .1212 .1313	48.4 7.7 8.2 8.7 9.3 97.8 15.1 16.4 17.4 18.7 145 21.9 23.2 25.1 27.1 194 28.5 30.5 33.1 36.0 242 37.2 40.1 44.5 280 51.6 291 - 47.4 -

Phosphorus (P) + Bromoform (CHBr₃) Phosphorus (P) + Decane ($C_{10}H_{22}$) Hildebrand and Buehrer, 1920 Hildebrand and Buehrer, 1920 white: miscible white: C.S.T. above 300° Phosphorus (P) + Methylene iodide (CH_2I_2) Phosphorus (P) + Benzene (C_6H_6) Madan, 1897 Giran, 1903 % % f.t. f.t. D H_{B} 90.9 88.9 87.6 18 36 98.0 81 18° 95.8 93.6 92.3 99 115 58 70 50 1.929 1.944 1.984 2.021 Phosphorus (P) + Ethylene bromide ($C_2H_hBr_2$) Phosphorus (P) + Naphthalene ($C_{10}H_{8}$) Hildebrand and Buehrer, 1920 Hildebrand and Buehrer, 1920 mol% (white)P₄ sat.t. mol% (white)Pu sat.t. mol% (white) Pu sat.t. mol% (white)Pu sat.t. 132.8 201.4 201.6 200.2 190.4 169.6 165.0 163.0 44 37 19 165.5 162.0 151.7 74 51 26. 25 20 56 53 44 40 195.5 202.7 Phosphorus (P) + Chlorbenzene (C_6H_5C1) Phosphorus (P) + Anthracene ($C_{14}H_{10}$) Hildebrand and Buehrer, 1920 Hildebrand and Buehrer, 1920 White phosphorus: C.S.T. = 264° $C.S.T. = 198^{\circ}$ Bingham, 1907 Phosphorus (P) + Phenanthrene ($C_{14}H_{10}$) $C.S.T. = 190^{\circ}$ Hildebrand and Buehrer, 1920 mol% (white)P4 sat.t. mol% (white) Pu sat.t. 45 43 199.1 198.0

Phosphorus (P) + p-Dibrombenzene ($C_6H_4Br_2$)	Hildebrand and Buehrer, 1920
	mol% (white)P ₄ sat.t. mol% (white)P ₄ sat.t.
Hildebrand and Buehrer, 1920	94 -7.8 50 -6.4
mol% (white)P ₄ sat.t. mol% (white)P ₄ sat.t.	66 -6.7 41 -6.4 57 -5.9 26 -6.6
50 154.3 39 163.0 51 159.4 30 159.2 46 162.0	
	Guglielmo, 1892
Phosphorus (P) + Carbon disulfide ($ ext{CS}_2$)	13° 100 1.273 87.85 1.514 96.57 .3529 53.50 .153
Beckmann, 1890	91.09 .455
% d	
46.3° 1.2223	Berghoff, 1894
92,18 1.2549	
% d (at b.t.) D b.t.	U U
99.467 1.2244 +0.098 98.443 .2284 0.292 97.421 .2325 0.486 96.411 .2366 0.662 94.59 .2443 0.980	20.7° 100 1.62697 87 1.66517 95 .64012 83 .67628 91 .65216 80 .68646
94.59 .2443 0.980 93.08 .2509 1.242 90.22 .2640 1.719 89.34 .2683 1.810 84.13 .2949 2.630	Eggers, 1904
	- β ε % ε 18°
Cohen and Inouye, 1910	100.0 2.65 80.1 3.35
% f.t. % f.t.	96,27 2,76 73,0 3,40 88,0 3,15
68.60 -10 25.00 -2.5 64.15 -7.5 18.73 0.0 58.05 -5.0 13.70 +5.0 33.86 -3.5 10.20 +10.0 28.28 -3.2	Bore (B) + Carbone (C)
34% sat.t.= _8°	Epelbaum, Gurevich and Ormont, 1956
	Phase equilibria of various samples.
Giran, 1914	
% f.t. % f.t.	Jdanov, Meerson and al., 1954 (fig.)
95.4 -79 33.2 -3.5 90.5 -49 24.2 -2 80.9 -23 16.4 0 78.9 -19 15.2 +3 77.6 -14 10.8 +14.5 69.1 -9 7.2 +25	% hardness % hardness (Kg/mm²) (Kg/mm²)
77.6 -14 10.8 +14.5 69.1 -9 7.2 +25	20 5240 22 4500 21 4750 24 4490 21.5 4500 26 4480

HYDROFLUORIC ACID + BENZOPHENONE

LXX. HYDRIDES AND HALOGENIDES + ORGANIC COMPOUNDS .							
Hydrofluoric acid (HF) + Benzophenone ($C_{13}H_{10}0$)							
Klatt, 1	935						
m	D b.t.	m.	D b.t.				
0.087 .214 .308 .455	+0.353 0.814 1.185 1.783	0.618 .768 .927	+2.471 3.109 3.814				
Hydrof	luoric acid	(HF) + Be	enzil (C ₁	_ц Н ₁₀ О ₂)			
n.	D b.t.	m	D b.t.				
0.085 .190 .295 .405	+0.204 .430 .656 .859	0,515 .626 .728 1.005	+1.061 .252 .421 .920				
Hydrof Klatt,	Hydrofluoric acid (HF) + p-Benzoquinone ($C_6 H_4 O_2$)						
m	D b.t.	n.	D b.t.				
0.153 .318 .501 .692	+0.329 0.674 1.059 1.460	0.894 1.095 1.293	+1.919 2.439 2.919				

Hydrochloric acid (HCl) + Ethane (C_2H_6) Quint, 1901						
			0 %			
V *	P	v liq.		v *	P	v liq.
			14.55°			
1890 1738 1615 902	38.03 38.09 38.09 38.09	21 31 106		420 190 189	38.14 38.21 38.25	162
V *		P		v*		P
			21.30	0		
2157 2149 2122 2105 2086 2065 2044 2022 1899 1886	2 5 5 3 3 7	37.18 37.25 37.58 37.81 38.01 38.23 38.46 38.69 40.24 40.38		1804 1792 1780 1710 1686 1615 1603 1566 ^a 194 ^a		41.45 41.64 41.81 42.74 43.07 44.00 44.16 44.25 44.47
			30.23	•		
2318 2269 2220 2170 2112 2077 2041 1990 1930)) 2 7 L	37.44 37.96 38.50 39.08 39.81 40.29 40.74 41.36 42.16		1820 1733 1628 1505 1402 1230 ^a 219 207 ^a		43.81 45.20 46.85 48.94 50.75 53.82 53.95 54.10
			49.45	0		
2342 2200 2069 1951 1840 1711 1591) 	39.32 41.14 43.05 44.78 46.64 48.88 51.17		1431 1261 1148 1027 913 830 ^a 239 ^a		54.64 58.47 61.20 64.18 66.96 68.47 68.63
270	4	27 22	52.5°	1007		FO 24
2546 2353 2163 1986	6 8 8	37.22 39.08 41.45 44.14 47.05		1807 1638 1450 1260 1075		50.34 53.72 58.28 63.42 68.88
P c	rit. = 8	880 P 34.13 51.3°	crit.	≈ 84.1	3 t	crit.
	fraction ginning					e . 10 ⁵

		12.10	1 0					21.2	0		
v*	P	13.18 mc	01 % — V*	P	v lig.	2241 2056	36.55 38.67		1161 1045 ^a	51.79 53.36	-
V *		13.7°			V 11q.	1867 1697	41. 0 3 43.41	-	839	53.57 53.76	172 245
2019	37.20	- 10,7	1367	40.72	43	1523 1340	45.98 48.95	- -	489 306 ^a	54.25	
1957 1897	37.86 38.54	_	$\begin{array}{c} 1110 \\ 868 \end{array}$	40.96 41.21 41.51	79 109			25.4			
1840	39.22 39.91	_	617 348	41.90	152 333	2294 2098	36.83 39.16	-	1208 1039	$\frac{53.18}{56.18}$	-
1725 ^a 1704	$\frac{40.41}{40.42}$	_	217 213 ^a	42.13 42.33	-	1914 1754	$\frac{41.60}{43.87}$	-	877 ^a 732	58.42 58.48	- 75
1548	40.60	19 21.3 °				1583 1401	46.59 49.73	-	511 332 ^a	58.72 59.19	233
2132	37.84 39.20	- 21.3	1428 1382 ^a	47.48 48.11	-	2414	36.52	_ 30.2	3° 1162	56,46	_
2020 1897	40.74 42.27	-	1061	48.48	-	2235 2059	38.56 40.83	-	865 610	62.20 64.80	-
1783 1655 1548	44.11		576 450 227 ^a	48.86 49.52	118 176	1867 1698	43.50 46.21	-	528 465	64.99 65.10	150 287
1540	45.66	25.4°	221	49.97	-	1528 1341	49.20 52,80	_	417	65,11	-
2270 2145	37.19 38.63	-	1419 1300_	49.34 51,41	-	1541		41.4	15°		
2020 1893	$\frac{40.27}{41.94}$	-	1212 ^a 961	52.74 53.10	- 54	2537 2355	37.29 39.46	-	1461 1292	54.60 58.58	-
1773 1655	43.65 45.43	-	643	53.57 53.96	128 292	2173 1976	41.83 44.75	-	1105 872	63.49 70.24	-
1540	47.29	30.23	236 ^a	54.48		1799 1641	47.70 50.80	-	582	78.02	-
2369 2232	$\frac{37.10}{38.71}$	- 30,23	1257 1255	54.25 54.28	-						
2045 1863	40.98 43.54	-	1032°	58.36	-		t	v		р	
1707 1569	45,99 48,34	-	808 479 250 ^a	58.78 59.38	66 167		30.43	439		.30	
1404	51.35	-	250	59.93	-	4	30.53 30.58	471 488		.42 (cri .45	tical)
v *		P	v *		P	<u> </u>	 	(1) (5			
2555	9	37:10	5° 1136		2.25	v	P	61.67		P	1:0
240g 222	6	38.79 41.20	953 853	67	7.09	' -		v liq.	<u>v</u>	r	v liq.
203 185	l	43.88 46.71	613 ^a 515	74	4.37 4.72	2015 1854	36.53 38.28	-	969 775	44.43 44.70	119 187
167. 151	5	50.07 53.36	425 313 ^a	7-	4.95	1651 1490	40.61 42.56	-	531 327 ^a	45.13	265
131		57.81	313	7.	5.26	1355 ^a 1177	43.96 44.17	- 56	317	45.83 54.33	-
273 269	5	37.15	1769	5.	1.63			21.3		66.94	-
2690 253	0 1	37.62 39.48	1585	5.	5.55	2160 1974	36.69	-	857 662	51.92 52.27 52.75	89 203
		32.70	1406	134	0.11		38.81	-			
234: 214	2 6	41.96 44.78	1234 1049	6.	5.06	1786 1612	$\frac{41.18}{43.56}$	-	484	52.75 53,18	300
214 195	2 6 9	41.96 44.78 47.92	1234 1049 878	6. 7. 7.	5.06 1.03 7.04	1786 1612 1422	41.18 43.56 46.18 48.73	-		52.75 53.18 63.01 69.15	
214 195	2 6	41.96 44.78 47.92 P crit. =	1234 1049 878 77,51	6. 7. 7.	5.06 1.03	1786 1612	41.18 43.56 46.18	- - -	484 365 ^a 337 326	53.18 63.01	-
214 195 v crit	2 6 9 . = 420	41.96 44.78 47.92 P crit. =	1234 1049 878 77,51	6. 7. 7. 1 crit	5.06 1.03 7.04 . = 43.1°	1786 1612 1422 1243 1015 ^a	41.18 43.56 46.18 48.73 51.64	- - - - 25.4	484 365 ^a 337 326	53,18 63.01 69.15	-
214 195	2 6 9	41.96 44.78 47.92 P crit. = 40.35 me v liq.	1234 1049 878 77,51	6. 7. 7.	5.06 1.03 7.04	1786 1612 1422 1243 1015 ^a 2245 2034 1778	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50	- - -	484 365a 337 326 4° 926a 799a 662	53,18 63.01 69.15 55.39 56.55 56.87	- - - 155
v crit	2 6 9 . = 420 P	41.96 44.78 47.92 P crit. =	1234 1049 878 77.51	6.77 77 1 crit	5.06 1.03 7.04 . = 43.1°	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65	- - - - 25.4	484 365a 337 326 4° 926 799a 662 550 416a	53,18 63.01 69.15 55.39 56.55 56.87 57.17 57.57	- - - 155 304
2146 195' v crit v 2116 1918	2 6 9 . = 420 P 36.29 38.51	41.96 44.78 47.92 P crit. = 40.35 me v liq.	1234 1049 878 77.51 01 % v	6:77 77 1 crit P 45.72 45.86	v liq.	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306 1122	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65 52.66	25.4	484 365 337 326 926 799a 662 550 416 ^a 361	53.18 63.01 69.15 55.39 56.55 56.87 57.17 57.57 64.38	- - - 155
214 195 v crit v 2116 1918 1745 1573	P 36.29 38.51 40.63 42.84	41.96 44.78 47.92 P crit. = 40.35 me v liq.	1234 1049 878 77.51 01 % v	6: 7. 7. 1 crit P	5.06 1.03 7.04 . = 43.1° v liq.	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306 1122	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65 52.66	25.4	484 365 337 326 926 799a 662 550 416 ^a 361	53.18 63.01 69.15 55.39 56.55 56.87 57.17 57.57 64.38	- - - 155 304
214 195 v crit v 2116 1918 1745 1573 1398	P 36.29 38.51 40.63 42.84 45.11	41.96 44.78 47.92 P crit. = 40.35 me v liq. 14.1°	1234 1049 878 77.51 01 % v 1345 ^a 949 609 282 ^a	66.77.77.77.1 crit	v liq.	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306 1122	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65 52.66	25.4	484 365 337 326 926 799a 662 550 416 ^a 361	53.18 63.01 69.15 55.39 56.55 56.87 57.17 57.57 64.38	- - - 155 304
214 195 v crit v 2116 1918 1745 1573 1398	P 36.29 38.51 40.63 42.84 45.11 fraction	41.96 44.78 47.92 P crit. = 40.35 me v liq. 14.1°	1234 1049 878 77.51 01 % v 1345 ^a 949 609 282 ^a 1 normal	6.777777777777777777777777777777777777	v liq.	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306 1122	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65 52.66	25.4	484 365 337 326 926 799a 662 550 416 ^a 361	53.18 63.01 69.15 55.39 56.55 56.87 57.17 57.57 64.38	- - - 155 304
214 195 v crit v 2116 1918 1745 1573 1398	P 36.29 38.51 40.63 42.84 45.11 fraction	41.96 44.78 47.92 P crit. = 40.35 me v liq. 14.1°	1234 1049 878 77.51 01 % v 1345 ^a 949 609 282 ^a 1 normal	6.777777777777777777777777777777777777	v liq.	1786 1612 1422 1243 1015 ^a 2245 2034 1778 1550 1306 1122	41.18 43.56 46.18 48.73 51.64 36.72 39.14 42.50 45.83 49.65 52.66	25.4	484 365 337 326 926 799a 662 550 416 ^a 361	53.18 63.01 69.15 55.39 56.55 56.87 57.17 57.57 64.38	- - - 155 304

/								E2 E0		=	
2271 36,79 2152 38.16 1928 40.96 1734 43.61 1554 46.40	27.25°	629 612 ^a 583 562 546	59.10 59.15 59.19 59.23 59.28	58 102 250	261 242 216 193	28	37.40 39.59 43.03 46.90	52.5°	1662 1187 936 758	53 71	.70 .13 .12
1336 49.97 1119 53.65	-	546 540 498	59.30 2 59.34	44 crit.		t	v		р		
1893 57.14 772 58.35 714 58.68 684 58.88 666 58.91	-	469 439 406 384 366	59.54 60.06 61.56 63.98 67.80	11111		27.33 27.34 27.35 27.37	530 677 811 576		56.92 56.49 55.69 56.84		
587 59.21	27.30°	564	59.25	-		27.39	664 645		56.62 56.68		
v	Р	v		P		27.40	671 590 6 1 7		56.75 56.87 56.83		
	30.23°										
2337 2188 2174 1984	36.73 38.42 38.60 40.96	1432 1256 1057 796	5 2 56	.60 !.70 .41).57	v	р	v liq.		_	р	v liq.
1795 1618 2518	43.63 46.35 41.45° 36.89	493 365 1192	74	3.64 1.91 2.26	1968 ^a 1818 1599 1321	32.29 32.36	- 37 78	13.2°	725 434 387 368 ^a	33.05 33.53 33.71	282 362
2285 2113 1920 1740 1553 1372	39.63 41.85 44.70 47.67 51.26 54.99	1185 1045 814 579 469	59 62 69 76	0.40 2.97 0.11 5.07 1.32	1032 1876 1785 1692	32.48 32.72 35.26 36.05 36.91 37.70	143 210	21.3°	1479 1469 1464 ^a	33.89 38.66 38,72 38.75	-
2665 2445 2195 2006	52.5° 37.20 39.80 43.18 46.07 49.13	1624 1391 1192 1017	58 64	3.38 8.90 4.42 0.19	1599 1506 1488 1822	38.38 38.59	-	25.4°	526 404 ^a 880	39.76 40.13	353 184
1830 1817	49.42	854		5.19	1599 1414 1265 1255	39.19 40.88 42.10 42.19	- - -		665 477 430 ^a	42.89 43.29 43.54	303 410
	71.41 mo										
P	v liq.	v	P	v liq.	v		p		v		P
1895 37.13 1735 38.81 1598 40.31 1451 41.92 1448 41.96 1422 ^a 42.18	14.5°	1153 882 611 606 347 ^a	42.63 43.15 43.77 43.78 44.60	81 172 264 267	17: 17: 17: 17: 17: 15: 15:	57 48 30 11 2 6	42.13 42.34 42.63 42.83 43.10 45.74 45.99	41,489	1489 1470 1228 1210 1191 1172	46 50 50 50	23 52 12 48 73 05
2066 37.15 1905 38.85 1709 41.26 1539 43.43 1357 45.81	21.3°	1079 ^a 838 582 385 ^a	49.08 49.62 50.44 51.10	133 282	178 176 172 173 171	57 19 30 .1	45:45 45.64 45.87 46.14 46.50	52,5	1489 1470 1228 1210	50 55 55	.26 .68 .47 .81
2142 37.24 1974 39.17 1774 41.69 1589 44.20 1426 46.54 1237 49.35	25.4°	1052 853 ^a 709 586 434 ^a	51.84 53.87 54.26 54.72 55.25	135 276	152 150 t	v 3 75	49.73 50.02	p 18.26	1191 1173		.65
					31.63 31.63	3 56	3 4	18.79 19.06			
2445 2285 2100 1910 1727	7.29 39.12 41.48 44.18 47.04	1362 1179 993 800 571	54 58 62 67	P.08 3.10 2.47 7.27 3.93	31.86 31.86 31.88	69 65	7 4 2 4	18.95 18.93 18.94 54.41	(criti	ical)	
1545	50.42				L						

	Hydrochloric acid (HCl) + Butane (C_uH_{10})
Lecat, 1949 % b.t. (48 atm.)	Ottenweller, Holloway Jr. and Weinrich, 1943
	P mo1%
48 15 Az 45 25.4	L V
	21.0°
Baume and Georgitses, 1912 and 1914	4.5 96.7 61.2 7.76 89.2 25.5 8.1 89.2 24.3 13.6 77.3 13.0
mol% f.t. m.t. mol% f.t. m.t.	13.6 77.3 13.0 14.4 76.9 10.7
100 -172.5 - 42.3 -126.0 - 92.1 142.7 - 38.6 125.4 -	14.4 76.9 10.7 19.3 65.9 10.6 22.0 57.4 9.8 23.9 53.5 9.6
87.7 134.5 - 31.9 124.6 -125.5	27.4 43.6 9.5
75.8 129.4 - 19.0 122.2 - 71.4 128.0 12.9 120.7	49° 6.81 98.0 -
68.0 126.5 -126.5 8.8 118.7 - 62.4 126.4 - 5.1 116.6 -	7.21 96.5 65.5 9.32 95.4
59.6 126.4 -126.5 0 -111.6 - 52.8 126.2 - 47.5 -126.1 -	10.5 92.4 45.3
	JF 16.5 85.5 =
	17.8 81.9 28.5 21.7 77.7
Hydrochloric acid (HCl) + Propane (C_3H_8)	17.8 81.9 28.5 21.7 77.7 - 21.8 76.4 23.7 24.9 72.2 21.0 28.2 67.7 21.5
	28.4 67.0 -
Glockler, Fuller and Roe, 1933 P P V	82° 13.5 96.5 75.5
100% 76.4mo1% 50.1mo1% 15.0mo1% 0%	13.9 97.2 76.2 17.3 94.2 56.3 17.5 92.7 61.3
116.3°	20.8 90.5 53.3 21.6 88.6 50.6
0 1,423 1,423 1,423 - 20 1,227 1,290 1,330 .360 - 40 0,956 1,115 1,220 .290 -	24.9 86.7 44.7 26.2 84.6 43.7
60 - 0.880 1.084 .202 - 80 - 0.929 .108 -	31.7 80.6 41.8 32.9 79.9 41.5 36.1 77.6 40.6
100007 - 95,5°	
0 1.350 1.350 1.350 1.350 1.350	
20 1.133 1.179 1.242 1.268 1.270 40 0.786 0.950 1.102 1.174 1.184 60 - 0.913 1.070 1.093	Hydrochloric acid (HCl) + lpha -Butylene ($C_{f u}H_{8}$)
80 0.688 0.955 0.994 100 0.825 0.886	
retrograde condensation	Coffin and Maass, 1930 (fig.)
mol% t range P range	mol% f.t.
8.4 50.8 - 51.0 76.6 - 76.8	25 -165 15 -135
15.4 52.8 - 53.0 74.0 - 74.5 24.1 56.0 - 56.4 71.6 - 72.6 38.3 63.6 - 65.0 67.0 - 69.3 47.8 67.4 - 69.3 65.0 - 67.2	5 107 0 -105
47.8 67.4 - 69.3 65.0 - 67.2 55.1 73.6 - 75.0 61.0 - 63.3	
65.6	
83.0 88.0 - 88.3 60.0 - 51.0 91.0 91.6 - 91.7 76.7 - 47.2	

Hydrochloric acid (HCl) + β -Butylene (C_hH_B)	Dorsman, 19	008	
	P	vol. 105 * P	vol. 105*
Coffin and Maass, 1930 (fig.)		0 %	
mol% f.t. mol% f.t.		20.09°	1000
65 - 165 25 - 140 55 150 15 125 50 135 5 106 45 135 0 -105 35 - 140	30.95 32.20 33.05 33.95 34.85 35.80 36.80 37.80	2661 42.05 2522 42.10 2434 42.10 2340 42.10 2251 42.20 2159 42.20 2073 42.25 1989 42.25	1090 912 616 408 264 237 203 201
Hydrochloric acid (HC1) + Methyl chloride (CH ₃ C1)	38.85 39.95 41.85 41.95 41.95 42.05	1903 44.70 1812 57.25 1643 67.80 1543 77.50 1458 87.35 1273	198 195 193 192 191
	33.05	30.10° 2646 52.40	1107
mol% f.t. mol% f.t. 100 -93.0 49.7 -131.7 90.5 98.7 43.9 136.4 79.5 100.2 36.8 148.9 71.8 109.4 27.3 161 65.9 114.6 14.5 130.4 60.1 121.4 0 -111.0 56.2 123.3 48.9 -131.7	34.15 36.05 37.40 40.10 44.05 46.70 48.45 49.90 51.50 52.35	2582 52.50 2349 52.50 2169 52.55 2010 52.55 1725 52.60 1562 52.85 1465 57.90 1383 67.70 1283 75.80 1211	991 835 647 435 230 214 211 208 205
Hydrochloric acid (HCl) + Carbon dioxide (CO ₂)	34.55 35.30 36.90 38.90 41.10 42.95 44.95	2597 58.80 2528 60.15 2383 60.25 2213 60.30 2042 60.30 1923 60.35	1060 998 921 784 650 498
Ansdell, 1880 and 1883	46.85 49.15	1680 60.50	351 285
t p t p 4.0 29.8 0% 33.4 58.85 9.25 33.9 39.4 66.95 13.8 37.75 44.8 75.20 18.1 41.8 48.0 80.80	51.60 53.55 55.35 57.05	1547 60.60 1428 63.05 1332 67.75 1237 77.25 1158 87.05	228 225 221 215 212
22.0 45.75 49.4 84.75 26.75 51.0 50.56 85.33	34.40 36.00	2652 58.65	1132
17.18% 19.37% 0 27.84 0 28.86 15 40.66 13.8 39.86 27 54.22 25.5 52.77 37.5 70.28 38.0 67.36 46 82.26 44.0 76.23 47.2 92.21 45.5 80.52 25.48% 42.44% 0 33.17 0 31.89 16.3 50.09 19.0 51.93	36.00 37.20 38.85 40.00 41.75 43.15 44.30 46.00 48.75 50.70 53.65 56.05	2497 61 40 2397 63 05 2251 63 05 2161 63 15 2037 63 15 1944 63 15 1849 63 20 1763 63 30 1611 63 35 1499 71 35 1371 78 45 1250 78 80	1013 908 822 724 695 564 435 309 232 225 221
25.4 63.98 25.6 60.46 34.0 77.02 39.5 80.28	34.50	40.20°	
43.2 90.02 45.67% 74.18% 0 32.72 0 34.56 17.5 50.73 18.8 55.79 26.6 63.31 25.5 65.68 35.0 76.64 33.5 77.69 37.6 79.14 38.0 81.35	36.15 37.25 38.25 40.20 40.45 41.60 43.00 44.30 45.60	2520 58.00 2425 59.90 2340 62.05 2250 64.10 2155 65.00 2069 65.00 1982 65.00 1900 65.00 1815 65.05	1282 1195 1105 1016 926 871 840 793 739 618
82.14% 0 34.65	47.15 48.75	1722 65.05 1632 65.20	458 223
18.8 56.44 24.9 67.27 32.4 77.23	50.55 57.35 54.15	1542 65.40 1459 71.10 1377 73.05	222 214 210

	P vol.10 ⁵ * P vol.10 ⁵
P vol, 10 ⁵ * P vol, 10 ⁵	28.47%
35.25 2680 60.50 1189 37.10 2519 62.75 1101 38.05 2431 65.00 1019 39.20 2340 67.75 916 40.25 2253 69.80 830 41.55 2155 71.95 732 42.70 2071 72.20 715 44.10 1983 72.30 658 45.60 1900 72.35 571 47.10 1807 72.35 571 47.10 1807 72.35 457 48.65 1722 72.45 311 50.45 1629 72.45 265 52.15 1548 72.50 264 54.15 1461 72.50 260 56.10 1381 77.25 246 58.15 1283 80.45 241	19.94° 33.35 2485 48.05 1062 34.35 2328 48.25 678 36.10 2204 48.35 678 37.70 2077 48.55 472 39.30 19.49 48.30 335 41.00 1827 49.55 223 42.70 1697 58.75 217 44.60 1566 68.20 214 46.65 1441 77.45 212 47.75 1254 22.52°
49,38° 36,30 2651 61,00 1238 37,35 2555 63,40 1149 39,30 2388 65,95 1064 40,50 2298 68,35 980 41,65 2201 70,95 886	34.10 2452 50.80 1085 35.40 2342 51.05 895 36.85 2210 51.20 725 38.45 1928 51.50 527 40.10 1950 51.70 365 41.75 1825 52.05 229 43.60 1694 58.05 222 45.70 1476 68.70 219 47.75 1436 78.95 216 49.90 1320 87.30 213 50.65 1257
45.75 1947 77.80 617 47.30 1862 78.30 572 48.95 1769 78.35 507 50.65 1679 78.55 417 52.50 1591 78.55 316 54.45 1509 78.60 291 56.10 1424 83.10 261 58.70 1332 90.30 246	25.69° 34.45
36.40 2670 67.15 1056 37.65 2564 70.00 966	
36.40 2670 67.15 1056 37.65 2564 70.00 966 39.15 2435 71.50 886 40.35 2338 75.35 791 41.65 2244 77.90 695 42.70 2159 79.85 614 44.40 2052 81.05 511 46.25 1947 81.35 444 48.05 1850 81.35 417 49.55 1766 81.40 364 51.35 1676 81.45 354 55.20 1589 81.45 336 55.20 1589 81.45 336 55.20 1507 81.80 309 57.30 1422 84.25 276 59.65 1320 86.05 268 61.95 1234 87.90 264	28.47° 35.20
52,00° 37,50 2598 59,70 1334 38,35 2519 62,30 1238 40,00 2385 64,80 1148 41,15 2296 67,45 1064 42,50 2199 70,20 978 43,50 2119 75,90 793 45,05 2031 78,50 704 46,55 1946 80,50 632	35. 25 2493 55. 20 1216 37. 10 2326 57. 80 1087 38. 50 2206 59. 85 977 40. 10 2072 60. 20 819 41. 95 1950 60. 50 634 43. 85 1826 60. 85 420 45. 95 1694 61. 70 244 47. 55 1603 67. 70 238 50. 00 1470 78. 25 231 52. 45 1355 87. 95 226
48.35 1940 82.25 507 48.15 1859 82.25 507 49.75 1769 82.80 422 51.50 1689 83.60 309 53.40 1593 87.20 265 55.55 1504 91.95 260 57.65 1422 * Fraction of theorical normal volume .	35.80 2489 57.55 1176 37.55 2344 60.40 1051 39.05 2216 63.15 931 40.75 2080 64.40 861 42.50 1960 64.85 674 44.60 1830 65.30 491 46.90 1695 65.75 268 49.25 1565 66.40 256 41.90 1436 77.95 239 54.75 1318 87.95 234

HYDROCHLORIC ACID + CARBON DIOXIDE

P	vol. 105*	P	vo1, 10 ⁵	Р	vol, 10 ⁵ *	P	vol.10 ₅
36.70 38.20 39.80 41.50 43.40 45.50 47.80 50.40 53.00 56.00	35, 3 2463 2337 2206 2075 1950 1825 1731 1556 1435 1305	58.95 62.00 64.15 67.25 68.05 68.55 69.05 69.05 69.00 77.20 86.90	1173 1046 962 830 779 603 384 265 252 241	38.05 39.30 40.95 42.80 44.80 47.15 49.40 52.15 55.15	44. 2492 2382 2254 2122 1995 1865 1741 1606 1480	78° 58, 25 61, 70 65, 60 69, 50 73, 70 77, 50 80, 50 82, 40 89, 75	135 8 1222 1084 959 830 702 576 435 287
	38.2			00,10		77°	201
36:65 38:05 39:65 41:40 43:15 45:30 47:55 50:15 52:65 55:70 58:90	2506 2387 2285 2120 1995 1871 1742 1602 1484 1362 1219	62.35 65.40 68.75 71.40 71.65 72.15 72.45 72.45 73.45 80.80 88.40	1089 970 837 712 697 533 370 305 281 257 247	38, 30 39, 75 41, 40 43, 40 45, 50 47, 85 50, 20 53, 10 56, 05	2510 2388 2260 2126 1994 1916 1743 1608 1482	59,25 63,00 67,05 71,25 75,85 79,90 84,30 87,70	1363 1223 1090 964 832 711 562 418
36.75 38.25 39.80 41.60 43.50 45.75 48.05 50.60 53.40	40.1 2517 2394 2265 2131 2000 1869 1742 1609 1480 1360	63.00 66.65 70.10 73.30 74.50 75.05 76.10 83.35 90.55	1091 964 837 705 631 493 338 321 265	38,60 40,15 42,00 43,90 46,00 48,35 50,95 53,70 56,85	2515 2388 2255 2123 1994 1868 1742 1609 1479	60.15 63.80 67.85 72.40 77.30 81.50 86.35 90.15	1362 1223 1095 968 830 712 568 431
56.40 59.60	1222		265 254	39.40 41.20	2542 2343	58.75 62.05	1434 1321
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78.30 78.50	507 441 42.3		420 377	33, 10 34, 40 35, 90 37, 40 38, 95 40, 75 42, 55 44, 55	2566 2433 2296 2169 2035 1906 1774 1638	51.30 51.50 51.65 51.95 52.15 52.25 54.80 61.35 68.15 76.05 84.85	843 661 435 338 259 238 234 229
78.30 78.75		78.95 80.95 49°	370 292	42.55 44.55 46.75 48.95 50.95 51.15	15 10 1383 1255 1122	68.15 76.05 84.85	225 224 221
77.15 78.40 78.75		78.95 79.30 81.50	406 345 329	33,30 34,95	2590 2433	54.25 54.35	1025 899
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42.15 44.05 46.20	1903 1774 1638 1507	58.30 58.65 67.60	314 249 239	76.35 76.50		38.21° 76.75 76.90	3 7 4	
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37.50 39.05	2159	60.85 60.95	707 558	77.00		88.61°		
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35.20 36.60 38.30 39.95 41.65	2538 2392 2295		1236 986 856	48.40 51.00 57.00	1773 1505 1383	80.15 87.00 91.70	448	
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48,55	1384	87.05	243	42.55 44.40	2160 2038	69.90 74.10	977 854	
37.00	2433	60,35 63,45 66,50	1110 985 855	46.85 49.20 51.95 55.00	1902 1774 1637	78.45 81.95 85.10	714 583 471	
38.50 40.30	2299 2217	60 10	767	33.00	150 7	89.90 5.88°	322	
41.95 44.10	2041 1905	68.65 68.90	640 444	37.95	2561 2430	59.15 62.85	1384	
46.10 48.40	1787 1655	69.30 69.65	304 27 9	39.45 41.30	2294	66.90	1239 1108	
48.40 51.30 54.25	1508 1382	68.65 68.90 69.30 69.65 77.25 87.50	261 250	43.15 45.10	2161 2033	71.20 75.80	98 2 850	
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24 40	2 534	35,32° 58,20	1229	50.00 52.70 55.80	1771 1638 1508	88.50	440	
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39.20 40.85	2294 2159	64.70 68.10	986 852	38,65 40,00	25 35 2427 2289	56.70 59.90	1474 1394	
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H 47.10	1634	71.85 72.35	536 33 2	45.80 48.20	2030 1903	72.55 77.55	992 856	
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43.20 45.30	2029 1903	74.85 75.30	591 457	46.50 49.05	2030 1904	74.40 79.55	990 859	
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38. 15 39. 20 40. 40 41. 65 42. 90 44. 30 45. 70 47. 15 48. 70	2113 1999 1932 1844 1752 1662 1576 1493	53, 35 53, 40 53, 45 53, 55 53, 65 53, 70 53, 75 58, 15	820 726 623 524 431 323 249 238 235		46.40 48.10 49.70 51.35 53.30 55.40 57.40 59.50	1756 1659 1579 1496 1414 1309 1226 1139	69.95 70.00 70.20 70.30 76.50 82.15 87.35	396 350 306 289 268 259 253	
50.25 51.85	1409 1317 1223	68.40 78.25 88.40	230 226 223	I	34.70 36.25 37.80 39.35	2634 2498 2324	33,50° 61,16 63,50 65,90	1099 1014 918 836	
33.25 34.60 36.05 37.60 39.30 41.05 42.90 45.00 47.05 49.70	2640 2503 2374 2244 2099 1974 1845 1710 1575	59.40 59.50 59.55 59.85 59.85 60.00 60.10 60.25 66.00 73.10	955 874 756 577 426 275 259 253 246		41, 15 43, 15 45, 25 47, 60 50, 10 53, 05 54, 90 56, 90 58, 95	2242 2100 1974 1845 1710 1578 1447 1368 1272 1186	67,95 70,00 71,50 71,65 71,85 71,95 72,10 77,60 82,90 87,05	737 650 548 400 318 301 273 263 258	
49.70 52.35 55.15 58.60	1321 1179 1010	73.10 80.70 88.05 28.50°	241 235 232		34.90 36.50 37.95 39.85 43.50	265 1 2503 2389 2236 1983	73.45 74.65 74.85 74.95 74.95	648 564 539 526 477	
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56.75 58.60	1176 1096	86,69 30,70°	242		75.65 75.70 75.75 75.80	471 459 441 426	75.95 76.30 76.85 78.35	366 333 318 301	
33.85 35.30 36.35 37.70 39.25 41.10	2668 2533 2437 2325 2197	61.80 63.90 65.85 67.00 67.15	1011 923 831 765 695		75.80 75.80 75.85	409 385	81.40 86.40 36.08°	286 273 918	
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45.80 48.20 50.80	1622	79.65 80.85	352	39.95 41.75	2207 2073 1949 1825	55.10 55.30	369 255	
55,65 56,75	1496 13 7 3	86.80 91.05	293 280	43.65	1694	55.45	255 243 242	
		42.20°		45.90 48.15 50.45 52.85	1694 1562 1436 1315 1178	55,50 62,00 72,00 80,75 90,40 96,20 23,47°	233	
36,10 37,80	2651 2507	63.05 65.65 68.60	1185 1099	50.45 52,85	1315 1178	72.00 80.75	228 224	
	2376 2235	68.60 71.35	1088	54.45 54.70	1091 902	90.40 96.20	220 218	
41. 20 43. 10 45. 15 47. 50 50. 90 52. 80 56. 00 59. 35	2100 1979 1852 1674	71.35 74.60 77.40 80.55	927 831 744		2401	23.47°	0.15	
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50.00 52.80	15.84	82.95 85.10 88.25	550 457 356	37.45 38.90	2190 2071	50,05	654 546	
56,00 59,35	1456 1322	88.25 95.05	356 300	38.90 40.60 42.45	1947 1823	53.05	432 273	
1		45.000		1 44 45	1693	58,25 58,35 58,40	254 247	
37.15 38.60	2602	61.60 65.65 70.10 74.55 79.75 83.55	1 277 1144	46.70 49.05 51.20 53.25	1562 1438 1331 1220	58.40 58.45	246 238	
40.60	2477 2328	70.10	1012 302	53.25	1220	66.10 76.30	2 31	
40.60 42.35 44.30	2194 2065	74.55 79.75	302 746	55.85 5 7. 55	1090 998	85.86 96.15	227 222	
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51.85 54.90	1666 1536	92.75 96.60	371 323	34,90 36,60	2459 2319 2196	61.65 61.80	881 773	
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42.75 44.55	2277 2148	65.80 70. 95	1229 1093	40.00 41.70	2065	64.45 64.65	601 478	
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33, 39°	53.85 1474 85.80 306 57.00 1351 91.40 282 60.35 1216 96.80 271
38.65 2247 72.40 476 40.55 2118 72.50 409 42.45 1987 72.60 378	40.70° 38.30 2404 61.15 1228 40.30 2246 69.00 961
35.70 2508 72.25 562 37.25 2378 72.30 488 38.65 2247 72.40 476 40.55 2118 72.50 409 42.45 1987 72.60 378 44.55 1858 72.60 359 46.90 1729 72.60 351 49.20 1597 72.65 323 51.90 1471 72.75 310 54.95 1350 72.85 306 57.85 1312 75.70 282 61.15 1174 81.90 264	44,10 1990 73,60 826 46,25 1868 77,50 702 58,70 1738 81,25 566
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70.90 700 96.30 247 72.15 615	38.40 2478 57.00 1447 40.15 2338 59.65 1358 41.80 2211 64.55 1177 43.65 2093 68.75 1050
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48.95 1500 71.15 254 51.60 1379 79.45 247 54.35 1240 88.75 240 57.35 1107	35,52° 36,55 2499 59,85 1193
57.35 1107 30.85°	38.00 2359 63.45 1065 30.45 2341 67.35 036
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37.85 2278 66.70 844	45.35 1854 77.60 522 47.70 1721 78.55 427
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43,40 1893 70,90 521 45,50 1763 71,10 385 48,15 1623 71,35 304 50,70 1494 78,40 272 54,00 1356 86,10 259	56.50 1336 38.51°
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41.10 43.05 45.10 47.60 50.10 53.05	2287 2158 2025 1897 1767 1631	67.95 72.70 77.60 83.90 90.05	982 852 713 577		35.10 36.45 38.05 39.65 41.40 43.40 45.45	2504 2382 2254 2124 1995 1871	62.05 65.05 66.75 66.80 66.90 67.35 67.70	968 837 736 652 502 346 294	
38.20 39.70 41.35 43.75 45.50 48.05 50.60 53.55	2543 2419 2294 2163 2028 1897	56.85 60.40 64.50 68.95 74.10 79.70 85.80 91.25	1503 1381 1240 1110 982 851		47,90 50,45 52,70 56,05 59,15			201	
	1771 1634 5 2542 2471 2384	57.75 61.35 61.35	1500 1380		35.70 37.10 38.75 40.40 42.25 44.35	2511 2390 2256 2128		1089 967 833 705 545	
42.05 43.95 46.20 48.60 51.35 54.40	2242 2021 1897 1764 1629	51.86° 57.75 61.35 65.55 70.25 75.50 81.00 87.75 91.50	1079 978 853 716 643		44.35 46.65 49.10 51.85 54.75 57.80	1872 1785 1608 1478 1360 1221	73,25 73,60 73,80 80,90 89,45	421 345 330 283 269	
H	-	85.74%		İ	-0		31.65°		
33.50	25.10	20.04°	0.22		73.55 73. 80	510 449	73.80 74.00	3 7 9 348	
1 34.90	2333	56.25	933 912				31 .7 5°		
36.40 38.90 39.60 41.49 43.35 45.40 47.70	2252 2125 1995 1873 1742	56, 15 56, 25 56, 30 56, 45 56, 60 56, 95 57, 60 61, 45 67, 00 76, 20 85, 90	744 586 438 297 256		73.75 73.75 73.80	:	31.80°	420 401 370	
45.40 47.70 50.00 52.60 55.00	1609 1482 1362 1222 1095	61.45 67.00 76.20 85.90	249 244 238 233		73.85 74.00 74.05		74.10 74.40	393 366	
33.111)		22.72°			36.40		35,32° 59,65	1220	
34.20 35.55 37.10 38.70 40.35 42.25 44.10 46.40 48.75 51.30 53.90	25 14 2387 2254 2124 1995 1872 1744 1609 1481 1358	56.60 59.55 59.75 59.80 60.10	1091 939 917 766 525 303 264 251 245 239		36.40 37.85 39.45 41.35 43.20 45.40 47.80 50.40 53.15 56.25	2520 2391 2262 2126 1999 1873 1742 1608 1481 1361	59.65 63.20 67.05 71.00 74.80 77.80 79.75 86.95 91.90	1090 965 834 701 561 423 305 291	
30.90	1222				37.15 38.50 40.20 42.05 44.05 46.25 48.65 51.30 54.30	2503 2385 2251 2122 1993 1867 1740 1608 1479	57.45 60.95 64.85 68.70 73.15 77.20 80.85 84.10 89.90	1359 1218 1086 967 812 703 571 428 326	

40,80° 37,40 52,513 55,58 1356 30,90 52,132 56,20 10,80 44,75 10,80 42,70 11,81 70,48 50,14 44,75 12,75 12,13 71	/00		F1	TURUCHLURIC AC	U T CARBO	א טוטאוט אכ			
39, 05 2379 62, 15 121	-								
47.00 1863 79,65 705 36,80 2270 60.10 899 49.50 1736 84.40 568 31.35 2133 60.20 765 52.20 1602 89.00 426 40.05 2010 60.30 536 536 52.50 1602 89.00 426 44.00 1836 60.55 324 44.00 1744 60.00 52010 60.30 536 44.00 1744 60.00 1755 324 44.00 1836 60.55 324 324 324 324 324 324 324 324 324 324	39.05 40.85	2379 2248	62.15 66.35	1215 1091	22.00	22	.92°	1000	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	47.00 49.50 52.30	1985 1863 1736 1602	75.45 79,65 84.40	824 705 568	35.25 36.80 38.35 40.05 42.00	2402 2270 2138 2010 1886	59.40 60.10 60.20 60.30 60.55	945 899 7 65 586 324	
42,95 2132 71,35 973 44,90 2005 76,15 844 47,35 1878 81,20 711 36,15 2386 59,55 1028 49,75 1750 86,30 576 52,60 1617 90.85 455 38,29 2216 62,25 902 52,60 1617 90.85 455 38,29 2216 62,25 902 538,49 2082 64,40 788 44,88° 44,88° 44,88° 44,88° 44,88° 44,88° 44,65 1828 64,80 379 39,75 2382 60,00 1423 41,53 299 72,95 1068 65,25 271 39,75 2382 60,00 1423 50,65 1439 79,10 243 41,545 219 72,95 1001 46,55 1991 72,95 1001 53,45 100 1607 88,80 571 35,00 2455 61,70 986 53,40 1607 88,80 571 37,20 2319 64,90 850 39,30 2471 57,55 1480 42,65 1918 67,20 723 40,65 2048 67,55 698 42,20 2198 65,00 1222 47,10 1650 67,90 9300 44,15 2116 69,50 1089 49,70 1516 68,35 287 46,25 1991 74,85 955 52,00 1394 67,50 597 40,35 2385 61,05 1360 44,75 1786 67,70 997 40,40 35 2521 55,05 1601 39,15 120 160 68,35 287 46,25 1991 77,80 833 55,35 1255 87,55 248 51,35 1739 85,60 705 52,00 1394 77,50 260 48,75 1867 79,80 833 55,35 1255 87,55 248 51,35 1739 85,60 705 52,00 1394 77,50 260 44,15 2116 69,50 1089 49,70 1516 68,35 287 46,25 1991 74,85 955 52,00 1394 77,50 260 48,75 1867 79,80 833 55,35 1255 87,55 248 51,35 1739 85,60 705 52,00 1394 77,50 260 44,60 2144 70,80 1082 44,60 2147 70,80 1082 44,60 2147 70,80 1082 44,60 1214 70,80 10	39,25	2522 2397	59.20 62.65	1233	46.53 48.70 51.20	1606 1477 1355	67.95 77. 75	246 239	
47, 35	42.95	2132	71.35	97 3	24.20			1150	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	47.35 49.75 52.60	1878 1750 161 7	$81.20 \\ 86.30$	711 576	36.15 38.20 39.30 41.60	2386 2216 2082 1956	59,55 62,25 64,40 64,65	1028 902 788 509	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	29.45			1479	45.90	1687	65.25	271	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	39.75 41.55 43.45	2382 2253 2119	60.00 63.75 68.05	1423 1221 1091	50.85	1430 1 2 97	79.10 87.10	248	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	48.05 50.50	1741 1607	$\begin{array}{c} 83.45 \\ 88.80 \end{array}$	83 2 711	35.60 37.20 38.95	2455 2319 2130	61.70 64.90 67.20	986 850 72 3	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		2471	57.55	1480 1360	42.65	1918	67.55 67.70 67.75	59 7	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	42.20 44.15 46.25	2198 2116 1991	65,00 69,50 74,85 79,80	1222 1089 955 833	49.70 52.00	1650 1516 1394	67.90 68.35 77.59	300 287 260	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	51.35	1739 1614	85,60	70 5	24.40			1105	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	38.95 40.65	2521	55.05		36, 10 37, 55 39, 25	2450 2323 2187	65,90	991 867 739	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	42.50 44.60 46.90	2248 2114 1984	66.05 70.80 75.80	1216 1082 961	45.20 47.70	1921 1 7 94	70.60 70.70	549 3 7 9	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	51.90	1735 5	52.55°	699	50.25 52.95	1520 1403	77.00 87.10	274	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	41.60	2511 2357 2203	64.35	1314	71 55			400	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46,00 48,30 50,80	2072 1948 1821	73.85	1045 919		504	71.85	400 325	
	53.70	1690	92.40		72.00	492 412	72.20		
II 72 80 456					72.75			343	

79 00	144	31,45°	207					
73.30 73.35	466 420	73.35 73.45	387 3 7 1			00% 0.00°		
7 3,40	465	31,50°	394	33.75			844	
73.40	430	73.45 73.50	377	35.10 36.60	2515 2339 2255	56.45 56.45	707 564	
		31,55°		38.20	2119	56.50	400	
34.95 36.45	2581 2447	57.00 60.30	1249 1118	38.20 39.85 41.70	2119 1995 1867 1731	56.55 56.55	329 307	
38.05 39.70	2314 21 7 9	64.00 67.55	983 850	43.50 45.60	1731 1604 1479	56.60 61.10 68.25	262 25 7	
41.65 43.65	2040 1912	70.50	724 635	48.00 50.35 52.85	1479 1356 1214	74.90	250 246	
45.80 48.30	1737 1648	72.00 73.35 73.70	522 367	55 45	1214 1080	83.05	242 239	
51.00 54.85	1513 1391	78.10 87.05	289 265	56.40 56.40	1080 1020 943	97.15	237	
34.60	1071	34.73°	203			2.30°		
35.45	2601	55.35	1383 1250	34.30 35.65	2508 2388	59.45 59.45	924 726	
37.10 38.75	2445 2310	58.45 62.25 65.95	1120	35.65 37.20	2253	59.45 59.50	684	
40.60 42.35	2170 2045	65.95 69.75 73.75	985 855	38.70 40.45	2119 1993	59.50 59.53	478 352	
44.55 46.90	1913 1780	73.75 77.55	713 516	42.25 44.30	1369 17 3 7	59.55 59.55	31 7 268	
49.50 52.15	1639 1513	77.55 81.25 88.55	326 285	46.55 48.95	1604 14 7 3	59.50 59.55 59.55 59.55 67.45 75.20 83.35	259 252	
	1010	40.00°	200	48.95 51.40 53.95 56.70	1473 1355 1214	83,35 89,45	248 245	
36.45 3 7. 90	2583 2523	56.95 60.50	1398 1253	56.70	1084	89.45 97.30	242	
39.65	2315	64.40	1119	38.75	2166 2166	5.10°	871	
41.45 43.40	2181 2048	64.40 68.70 73.60	993 862	39.70 41.05	2079	62.65 63.35	831	
45.70 48.05 50.70	1919 1 7 89	77.95 82.45 87.05	724 584	42.30	1997 1912	63.40 63.40	780 730	
50.70 53.70	1652 1520	87.05	432	42.30 43.70 45.10	1320 1736	63.45 63.50	63 7 510	
		44.98°			1649 1561	63,50 63,60	354 302	
37.35 38.95	2582 2443	$55.40 \\ 58.90$	15 20 1394	48.25 49.80 51.60 53.55	1479 1397 1300	63,60 63,60	293 284	
40.65 42.50	2315 2130	62.65 66.80	125 i 1123	53.55 55.45	1300 1212	67.95 75.90 83.25 90.90	274 264	
44.60 46.90	2044	71.55 76.55	9 92 863	55.45 57.30 59.45	1300 1212 1126 1040 951	83.25 90.90	257 250	
49.45	1920 1788	82.20 88.55	721	61.05		95,95	248	
57,20	1651	88,55 51,56°	57 5	34.65	27. 2551	63.05	918	
38.40	2584	57.55	1502	35.95	2433 2299	64.85	829 745	
40.00 41.85	2452 2368	$\substack{61.05 \\ 65.40}$	1393 1 2 53	39.15	2167	66.30 66.35	630	
43,90 45,90	2175 2055	69.80 75.15	1124 994	39.15 40.90 42.80 44.90 47.20 49.65	2037 1912	66.40 66.45	674 339	
48,50 51,15	1920 1787	80.95 82.50	861 729	44.90 47.20	1783 1648	66.50 66.50 72.95 80.70	328 296	
54.15	1652	02,00		49.65 52.40 55.25	1520 1395 1260	72.95 80.70	277 266	
				55.25 58.10	1260 1130	87.75 97.15	259 253	
				61.20	998	,	200	
			l l					

				37.4 38.8	5 24	42 .7 0 556 140	58.20 62.05	1404 1256	
	29	.5 7 °		40,6	5 23	305 1 7 6	66.05	1130	
34.70	2589	63,05	987	42.4 44.5	n 20	141	70.50 75.25	1000 8 7 3	
35.90 37.55	2477 2344	65.25 68.20	900 768	46.8 49.2	0 19	15 783	80.35	736 599	
39,15	2212	69.95	659	51.4 55.0	5 16	551	85.60 91.30	448	
40.95 42.80	20 7 5 1954	70.25 70.35	621 540	55,0	5 15	520	96.55	3 7 1	
44.85	1827	70,40	383	20.4	0 25	46,20		1207	
47.15 49.70	1692 1559	70.40 77.05	326 287	38.4 40.2	0 23	31 385	59.80 63.70	139 7 1256	
52.45 55.25	1438 1316	83.55 91.40	275 266	42.0 43.0	5 22 9 21	255 121	68.00 72.70	1123	
55.25 58.05	1186	96.20	262	46.2	ó 19	96 139	77.90	999 867	
61.10	1059			51.1 54.1	5 17 0 16	605	83.40 89.50	741 601	
70.00		.98°	0.05	54.1 56.3	5 15	20	97.10	601 452	
70.90 71.05	601 471	71.10	337			48,80			
		.00°		39.1 40.6	0 25 5 25	3 19 389	58.30 62.30	1408 1354	
72.65 72.75	507	73.35 73.85	339 330	42.6	0 22	256	66.15	1215	
72.75 72.80	454 424	73.85 74.90	330 318	44.5 46.9	5 21 0 19	21 94	76.65 75.80	1087 959	
72.80 72.80 72.80 72.80 72.80 73.10	405 401	78,55	297	49.2 52.0	5 18	370 736	81,45 89.80	826 648	
72.80	374 352	85.45 90.80	281 273	55.0	5 16	603	96.60	523	
73.10		95.60	267	1		52.00)°		
06.70		.10°		39.6	5 25	14	59.45	1477	
36.10 37.65	2523 2394	62.35 66.10	1088 959	41.1 43.1	5 28 0 22	314 395 257 124	63,20 67,45	1356 1216	
39.25	2265	69.95	818	45.1 47.5	5 21	24	67.45 72.20 77.60	1088	
41.05 43.05	2122 1993 1870	73.15 75.30	685 551	50.1	5 18	96 366	86.35	959 77 6	
43.05 45.15 47.50	1870 1737	76.10 77.75	449 343	52.8 56.0	5 17	738 604	91.25 96.75	680 586	
49.95	1737 1605	83.10	30 3			-	,	- 50	
49.95 52.85 55.85	1476 1354	89.05 96.75	286 275						
59.15	1209								
000		.50°	1010						
37.35 38.75	2485 2363	60.05 64.75	1213 1086	1					
40.10 41.85	2265 2123	68.80	95 8 827	Jung	and Schm	ick, 1930			
42.90	2001	73.10 77.30	684	%	η	%	η		
42.90 46.25 48.75	1870 1736	80.65 83.45	570 429		***	18°			
51.40	1605	89,55	331	1 0	14.44	60	15. 15.	02	
51.40 54.35 57.55	1478 1355	96.30	303	10	14.44 14.59 14.72	70 80	15. 15.	03 00	
		.00°		20 30	14.83	90	14.	95	
37.50 39.15	2521	58.50 62.15	1358 1215	40 50	14.9 2 14.99	100	14.	សភ	
39.15 40.85	2386 2254	62.15 66.15	1086	====					
40.85 40.70 44.70	2119 1995	70.40 74.95	959 826						
47,05	1869	79,20	703						!
49.50 52.30	1 7 38 1603	83.80 90.70	554 3 7 1						
52.30 55.30	1480	97.30	322						
				1					i
				1					

Hydrochloric acid (HCl) + Methyl ether(C ₂ H ₆ O)	Lecat, 1949
	% b.t.
Shidei,1925	0 -84
P P ₂ P ₁ P (1+1)	40 -1.5 Az 100 -23.65
0.99580 0.42929 0.44061 0.12590 .99408 .39646 .47834 .12120 .99593 .34717 .53199 .11766 .995940 .28252 .59824 .11466 .99698 .23831 .65630 .10240 .99513 .39183 .47298 .13026 .99593 .47171 .39912 .12513 .99593 .47171 .39912 .12513 .99593 .4920 .37507 .12617 .99580 .56700 .30778 .12104 .99593 .43473 .43359 .12803 .99660 .45659 .41411 .12588 .99672 .44082 .43022 .12566 .99566 .41510 .45771 .12287 .99672 .38405 .48815 .12451 5 0.99555 0.43476 0.44639 0.11441 .99528 .44163 .44004 .11358 .99513 .37669 .50793 .11045 .99593 .24735	Baume, 1911 and 1914 mol% f.t. mol% f.t. 100 -138.0 43.5 -102.1 94.0 145.0 42.6 101.0 89.9 141.6 41.4 105.6 82.9 130.1 39.2 114.1 75.7 121.3 27.9 109.5 69.6 114.6 26.7 108.7 64.8 108.5 21.9 103.5 61.3 104.2 20.1 102.9 56.2 101.5 16.6 107.2 53.6 98.5 13.9 111.7 51.3 97.8 13.3 133.0 49.6 97.2 10.1 119.2 48.0 97.8 13.3 133.0 49.6 97.2 10.1 119.2 48.0 97.8 4.5 113.9 45.8 98.7 0.0 -111.5
99672 28709 60992 09967 99593 51741 36831 11020 99660 49161 39540 10953 99646 47637 41115 10897 99555 45548 42685 11322 99633 57677 31796 10153 99593 74367 16893 08326 99488 40903 46982 11399	Maass and Mc Intosh, 1912 % f.t. % f.t.
0.99560 0.47462 0.42369 0.09724 .99560 .52093 .38292 .09170 .99550 .62062 .28223 .09261 .99660 .42210 .47568 .09683 .99560 .39173 .50880 .09506 .99580 .28420 .63154 .08003 .99450 .45608 .43990 .09845	0.0 -112.0 38.7 -121.2 5.5 122.7 39.3 117.0 8.0 126.0 45.4 103.0 10.4 128.7 47.8 100.4 15.9 120.6 52.8 96.8 21.8 115.8 62.8 100.4 23.5 116.8 68.8 106.0 24.7 116.8 75.6 115.0 27.9 101.2 81.4 123.0
0.99580 0.46200 0.46099 0.07280 .99540 .45009 .46678 .06871 .99593 .44103 .48560 .06908 .99500 .41855 .51166 .06472 .99580 .31338 .62291 .05955 .99540 .47429 .45154 .06959	27.9 101.2 81.4 123.0 30.4 105.7 90.2 132.4 30.9 106.1 100.0 138.0 34.5 _ 112.4 (1+1) f.t.= _96° (3+1)102°
.99540 .49444 .43522 .06569 .99566 .53581 .39466 .06514 .99540 .64323 .29333 .05880	Maass and Mc Intosh, 1913
.99540 .46669 .46037 .06829 .99528 .38750 .54268 .06513	% и % и
Kuenen, 1900 and 1901 * t crit. P crit. 0 53 85 100 124 52 max. 154 80 max. 118 110	2.3 9.93 -89° 57.2 12.7 3.8 59.5 63.3 6.12 7.8 206.0 67.9 5.40 9.5 281.0 72.4 3.84 12.7 377.0 77.4 2.64 17.0 470.0 81.0 1.56 20.5 455.0 83.9 0.99 26.9 274.0 88.1 0.40 32.1 234.0 94.8 0.12 39.4 200.0 97.9 0.02 46.7 129.0 99.5 0.004 52.4 110.0

								······································]
Hydroc	hloric aci	d (HC1)	+ Ethyl	ether (C	₄ Η ₁₀ 0)	Mc In	tosh, 192	28			
						mol%	f.t.	mol%	f.t.	mo1%	f.t.
62.49	b.t. -9.2	66.35	b.t. + 4	73.48	b.t. +17 18	57.5 53.3 52.7 50.0 49.4 46.8	-102.9 -101.3 -100.0 - 98.6 - 99.7 - 98.9	45.8 43.5 34.1 33.6 32.4 31.4	- 97.9 -100.0 - 82.0 - 82.0 - 82.8 - 83.2	30.0 19.5 18.5 16.4 15.5 15.0	-84.8 -99.6 -96.2 -92.9 -92.6 -94.2
62.51 62.58 62.68 62.82 63.00 63.20	-9 -8 -7 -6 -5 -4	66.90 67.45 68.00 68.55 69.10	+ 5 + 6 + 7 + 8 + 9 +10	74.00 74.56 75.10 75.65 76.19 76.73 77.27	19 20 21 22	46.4	- 99.5		+1) (2+		
63.42 63.70 64.00 64.40	-3 -2 -1 0	70.20 70.75 71.29 71.78	+11 +12 +13 +14	77.82 78.36 78.90	23 24 25 26 27	%		olar refr D			
64.47 64.80 65.30 65.80	+0.5 +1 +2 +3	72.27 72.38 72.93	+14.8 +15 +16	79.44 79.99 80.53	27 28 29 30	71.77 82.30	11.21 11.07	18° 11.23 11.38 11.18	11.25 11.41		
Messe	J W T					83.44 89.51 90.90	11.04	11.18 11.05 11.06	11.26 11.27 11.10		
maass %	and Mc Int	osn, 1913 %	f.t.			M		1 101			
0	-112.0	46.2	-88.0			Maass %	and MC 11	ntosh, 191	<u>ж</u>		и
1.3 3.8 20.1 24.8 28.0 28.5 30.4 31.0 33.7 35.5 36.3 38.3	-114.0 -116.5 -108.0 -93.0 -89.0 -90.0 -90.0 -92.0 -96.0 -100.0 -98.5 -93.0	49.8 50.5 53.0 53.1 57.0 58.7 61.9 63.5 65.8 67.8 69.7	- 88.0 - 89.0 - 95.0 - 100.0 - 100.0 - 96.0 - 94.0 - 93.0 - 92.5 - 97.0			2.5 3.5 5.6 8.2 11.1 14.3 18.0 23.4	2.75 6.88 20.0 47.0 73.6 97.0 117.0	<u>_</u>	-89° 109.0 82.3 53.7 47.8 41.9 32.4 17.8 10.0	71.0 75.0 79.0 81.3 84.5 89.4 93.9 95.8	6.68 4.42 2.42 1.83 1:13 0.37 0.12 0.025
39.8 42.5	-90.0 -90.0	71.8 74.1	-100.0 -105.0	l I		Mouna j	ed, 1933				
	(5+1)	(2+1)) (1+	1)		N (HC1)	λ		N (HC	1)	λ
						<u> </u>	1	2		1	2
Hirai,	1926 f.t.	mo 1%	f.t.			0.02 0.06 0.20 0.39	5.88 2.80 11.7 7.3	85.3 20.6 14.7	3.49 3.83 4.50 5.50	105 772 277 629	177.0 185.5 290.6 594.7
100.00 89.16 86.93 79.68 77.33 68.04	-117.7 -118.8 -119.3 -124.2 -127.8 -126.5	36.29 31.70 27.39 21.06 18.76 11.20	-87.4 -89.0 -93.5 -100.4 -104.0 -113.5			0.81 1.60 2.21 2.40	7.3 5.4 7.7 17.8 21.0 mediately	8.1 23.2 39.5 7 2: a	6.33 6.61 6.69 6.80	1168 1732 1981 4123	- -
63.66 59.55 52.13 50.97 47.18 44.84 38.24	-115.4 -110.9 -100.4 -100.9 -107.3 -94.5 -89.3	40.55 16.08 5.76 4.65 3.87 0.00	-115.5 -123.6 -123.7 -120.8 -120.5 -112.5				chloric a	cid (HC1) + Isoamy (C _{1 o} F		
		(1+1)	(2+1)			%	sat.t.	%	sat.t.	Æ	sat.t.
						0 5	81.35 83.09	9 13	83.73 84.77	15 25	85.24 88.57

									
t	đ	t	đ	Hudwook Lo		HG1 > 4 4			
4	0.8366 14	.41% 9	0,8323	нуагоспіо	ric acia (HCl) + Ace	tone (C	₃₈ H ₆ O)	
8	d (4°)	d (15°)	d (25°)	Hirai, 19	26				
87.18	_	0.8263	0,8214	mo 1%	f.t.	mo1%	f.t.		
89.32	0.8252	0.8152	0.8108	100 85.57	-94.5 -107.0	54.88 47.09	-81.7 -80.0		
%		8		79.50 72.71	-111.4 -114.6	44.44 42.74	-82.7 -86.6		
87.18	1.0361 19	.6° 89.32	1.0205	68.22 57.01	-104.2 -85.7	39,61	-82.8	(1+1)	
				Mc Intos	h 1928				
Hydrochlor	ic acid (HCl) + β,β'-Dicl	hlorethylether ($C_{\mu}H_{8}OCl_{2}$)	mo1%	f.t.	mo 1%	f.t.		
0'Brien, 1	942								
m(HC1)	p ₁	m(HC1)	p _†	63.5 52.9	-91.5 -76.9	$\frac{36.8}{30.3}$	-94.6 -81.2		
0.794	533	.0° 0.182	109	46.2 46.0	-78.0 -78.0	28.3 25.7	-80.8 -85.3	(1.1)	
0.481 0.305	287 186	0.168 0.090	103	42.3	-84.6			(1+1)	
0.202 0.198	122 116	0.0419	23.7						
0.571		.0° 0.165	124	Hydrochlo	ric acid (HCl) + Ethy	/l forma	te •	
0.556 0.555	401 413	$0.140 \\ 0.126$	94 84	nyuroenro	iic acia (ner) . Een	, 1 101	(C ₃ H ₆ O ₂)	
0.538 0.518	378 363	$0.103 \\ 0.0758$	68.3 54.3	Gerrard a	nd Macklen,	1956			
0.502 0.308	365 215	0.0572 0.0091	38.1	mol %	t	mol %		t	
0.308	124	0.0091	6.6	89.36	33.5	75,99		15.2	
0.366 0.343	283 260	0.0292 0.0224	25.6 17.2	85.47 82.30	28.6 24.3	71.54		8.1	
$0.291 \\ 0.265$	307 307	0.165 0.0711	$\frac{160}{70.9}$						
0.166	177	0.0711	70,7	Hydrochlo	ric acid (H	IC1) + Methy	l acetat	e (C ₃ H ₆ O ₂)	
Hydrochlori	c acid (HCl) + Anisole (CaHoO)	Gerrard and Macklen, 1956					
,	•	,	-78- /	mo1%	t	mo1%	t		
0'Brien, 19	942			73.02	30.4	64.34	14.7		
m(HC1)	<u>p</u> 1	m(HC1)	P ₁	70.42 68.77	26.3 23.3	60.46 50.17	6.6 1.6		
0.109	82.7 70.7	20° 0.0926	66.3	66.48	19,0				
0.100	70.7	0.03 78	30.3						
0.448 0.200	408 181	0.059 0.073	52.7 66	Hydrochlo	ric acid (H	IC1) + Ethyl	acetate	(C4H8O2)	
0.092	85	35°							
0.400 0.253 0.250	410 264	0.0764 0.0720	77.8 72.0	Gerrard a	nd Macklen	, 1956			
1	250	0.0449 40°	45.9	mo1%	t	mol%	t		
0.179 0.0887	216 98.8	0.0929 0.0735	106 82.3	80.3	-44.8	63.6	_15.1		
0.0463	61.8	2,0,00	92.0	80.3 73.2 70.6	33.3 28.7	61.0 58.8	9.7 -4.9		
				66.2	-20.4	•			
									

mol %

Hydrochl	oric acid ((HCl) + Prop	yl acetate(C	₅ H ₁₀ 0 ₂)	Hydrochl	oric acid (l	HC1) + s
Gerrard	and Mackles	n, 1956			Gerrard a	and Macklen	, 1956
mo1%	t	mo1%	t		mo1%	t	mol%
79.6 72.1 67.4 65.1	-46.4 34.1 25.1 -20.8	61.2 59.6 58.1	_ 12.5 9.2 _5.7		78.12 71.84 68.54	44.7 35.5 29.9	63.93 60.64 55.00
Hydrochl	oric acid	(HC1) + Isop	ropyl acetat	e	Hydrochl	oric acid (HC1) + (
•		_	1002)		Gerrard	and Macklen	, 1956
Gerrard	and Mackle	n, 1956			mo1%	t	mo1%
m o 1 %	t	mo1%	t		79.69 73.75	47.6 37.6	65.2 62.1
81.10 71.43 69.01	48.3 34.2 28.8	63.45 61.23 57.87	20.6 16.4 9.5		69.44	37.6 30.2	62.1 57.2
Hydrochl	loric acid	(HC1) + n_Bu (C ₆ H	tyl acetate		Gerrard mo1%	and Macklen t	, 1956 mol%
Gerrard	and Mackle	n, 1956			87.56 85.47	42.0	78.44
mo1%	t	mo1%	t		81.84	36.8 27.4	75.59 73.16
78.18 74.80 68.16	45.0 39.5 27.5	64.27 60.06 57.44	19.7 10.7 4.8		Hydrochlo	oric acid (HC1) + F
					Gerrard a	and Macklen	, 1956
Hydroch	loric acid		Butyl acetate I ₁₂ 0 ₂)	·	mo1%	t	mo1%
Gerrard	and Mackle	_	-1 * * * /		83.54 78.44 75.35	42.3 31.0	71.84 69.74
mo1%	t	mol%	t		75.35	24.5	67.10
78.37 72.30 69.54	44.2 34.9 30.5	63.89 60.46 56.43	20.5 14.3 6.1		Hydrochl	oric acid (HC1) + :
					Gerrard	and Macklen	, 1956

Hydrochl	Hydrochloric acid (HCl) + sec.Butyl acetate ($C_6H_{12}O_2$)										
Gerrard	and Mackler	1. 1956									
	t	mo1%	t								
	L	MO 1 70									
78.12	44.7	63.93	21.4								
71.84 68.54	35.5 29.9	60.64 55.00	21.4 15.7 4.1								
00,01	47.7										
Hydrochl	Hydrochloric acid (HCl) + 0ctyl acetate $(C_{10}H_{20}O_2)$										
Gerrard	and Mackle	n, 1956									
mol%	t	mol%	t								
79.69	47.6	65.23	22.2	_							
73.75	37.6 30.2	62.11 57.24	15.7 5.4								
69.44	∂U.2	37,24	J.4								
Hydroch I	Hydrochloric acid (HC1) + Phenyl acetate ($C_8H_8O_2$)										
Gerrard	and Mackle	n, 1956									
mo 1%	t	mo1%	t								
87.56	42.0	78,44	19.4								
85,47	36.8	75. 59	$18.4 \\ 10.3$	1							
81,84	27.4	73. 16	3.9								
Hydrochl	oric acid ((HCl) + Benz		,							
		(C ₉ H	1002)								
Gerrard	and Mackler	ı, 1956									
mo1%	t	mo 1%	t								
83,54	42.3	71.84	$\begin{array}{c} 16.2 \\ 11.0 \end{array}$								
78.44 75.35	31.0 24.5	69.74 67.16	4.8								
Hvdrochl	oric acid	(HC1) + 2_Ch	loroethyl ac	etate							
		,	10101011111								
		(C.H	702C1)								

mol %

75.46 71.68

t

17.0 6.8

Hydrochloric acid (HCl) + Ethyl propionate	M* λ M* λ
(C _g H ₁₀ O ₂)	_33.50
Gerrard and Macklen, 1956	0.001575 0.3686 0.1071 0.3560 .003181 .2815 1898 .6276 .006492 .2255 .2105 .6787
mol% t mol% t	.013420 .1980 .3817 1.461 .027110 .1980 .7518 2.854
80.64 46.2 62.77 14.3 76.05 38.5 60.91 10.3 69.88 28.3 59.38 7.0 66.13 20.8	.054060 .2383 1.4890 3.755 .094580 .3308 2.8720 2.557 *M (1+1)
Hydrochloric acid (HCl) + Ethyl n-Butyrate	
(C6H12O2)	Fritzgerald, 1912
Gerrard and Macklen, 1956	M (1+1) λ -33,5° -15° 0° +15°
mol% f.t. mol% f.t.	
78.93 45.4 67.95 25.4 76.27 40.6 60.53 10.2 71.89 33.0 58.58 6.1	6 - 0.763 1.54 2.59 4.221 - 2.49 3.83 5.38 3.073 2.44 4.08 5.56 7.02 2.165 2.53 5.16 6.35 7.39 1.575 - 5.40 6.17 6.67 1.303 3.91 4.94 5.61 5.97 1.109 3.80 4.58 4.97 5.28
Hydrochloric acid (HC1) + Ethyl dichloracetate (C _h H ₆ O ₂ Cl ₂) Gerrard and Macklen, 1956	1.109 3.80 4.58 4.97 5.28 0.670 2.76 3.10 3.17 3.06 0.342 1.36 1.34 1.25 1.13 0.175 0.605 0.568 0.492 0.430 0.0899 0.329 0.298 0.258 0.212 0.0460 0.245 0.225 0.193 0.162 0.0236 0.229 0.198 0.174 0.145
mol% f.t. mol% f.t.	Hydrochloric acid (HCl) + Aniline (C ₆ H ₇ N)
94.08 47.8 86.35 13.2 92.33 39.3 85.54 9.5 90.25 28.8 84.75 5.8 88.19 21.0	Leopold, 1910 mol% b.t. mol% b.t. 225mm 760mm 225mm 760mm
	225 mm / O O min 225 mm / O O D D D
Hydrochloric acid (HCl) + Ethylamine (C_2H_7N) Elsey, 1920	100.0
M* d M* d	57.7 - 218.4 50.2 202.5 - 57.2 - 223.4 50.0 199.5 220.4
-33,5°	53.0 193.6 241.2 49.8 135 206.0 52.6 - 242.2 48.7 100 -
0 0.742 0.7518 0.771	
0.3817 0.767 1.489 0.811	mol% sat.t.
М * п М* п	1.1 20.0
_ 33,5°	1.9 13.8 5.3 10.5 C.S.T.
1.4890 1863 0.18980 663.4 0.7518 986.0 0.09458 616.5 0.3817 761.4 0 574.9	10.6 23.0 C.V.T. = 51.1°

			- 							
t	P	t	P		Hydrochlo	oric acid (1	HCl) + Met	hyl alcohol	(CH ₄ 0)	
113 137 156 170	(1+1) 0.3 C+V 0.9 2.3 4.7	197.5 198 199.2 202	15.8 16.2 C+L+V 22.2 24.8 L+V		Gerrard mo1%	and Mackles	n, 1956 mo1%	solubil t	i ty	
180 190 196	7.3 11.3 14.7 sat.so	205 207 1. (L ₂)	27.3 29.7		60.78 58.82 56.02	34.2 27.6 18.7	54.49 53.10 51.73	12.4 7.2 2.1		
101.2 111 131 140	4.5 C+L+V 6.9 13.3 16.9	192.1 194.2 195	24.8 21.1 19.0 18.2		Maass and Mc Intosh, 1913					
151 154 162 167.1 170 173 177.2	16.9 22.1 23.4 26.5 28.1 28.5 29.0 29.0 28.6	196 197 198 198.5 198.8 199 203	16.9 16.1 16.1 16.8 17.6 19.4 22.9 L+V	16. 1 16. 1 16. 8 0. 0 4. 6 19. 4		0.0 -112.0 42.2 -4.6 -114.0 46.7 -8.8 -116.0 51.7 -		-68.0 -63.0 -66.0 -78.0		
180.3 184.2	27.5	206 208	25.3 27.5		35.0 38.0	-105.0 -85.0 -76.0	93.9 100.0	-101.0 -95.0	(1+1)	
100 120 135	sat.s 100.7 C+V 106.3 110.6 113.6	ol,(L ₁) 185 189.5 198.7	125 126.4 103.5 C+L+V	,		nd Pamfil,				
145 160 170	113.6 117.8 120.7	199 202 206	71.8 76.3			f.t.	mo1%	f.t.		
178 	123.0	210.7	82.8		0 17.5 24.2 31.6 38.5	-111.9 -113.9 -108.2 -97.8 -78.6	51.5 75.9 81.0 88.9 100.0	-65.4 -72.3 -81.8 -109.9 -96.3		
Lecat	, 1949				45.9 51.3	_66.8 _66.5			(1+1)	
%		b.t.								
72.5 100		-84 +244.8 Az 184.35				er, 1928			···	
					M*	d	М	d		
Leopo mol%	1d, 1909 f.t.	mo 1%	f.t.		0.507 1.022 2.027 3.016	18° 0.81039 .82576 .85254 .87576	4.977 5.983 7.077	0.91535 .93320 .95031		
100 98.0 95.3	-6.8 -7.3 +24.2	55.5 53.0 51.0	+186.2 192.2 197.5		4.007	.89660 ity of HCl				
90.9 83.3 76.8 71.4	124.4	50.5 50.0 49.8 49.7	198.6 199.2 199.0 198.7	(1+1)	Gladsto	ne and Hibb	ert, 1897			
66.7 65.0 62.5 58.8	154.0 158.0	19.6 12.0 5.3 0.0	+11 -28 -62 -112.5		%	molar re Hα	D 180	(HC1) Hβ	 	
					59.2 66.1 81.3 90.03	13.14 13.33 13.78 14.13	18° 13.26 13.49 13.95 14.32	13.53 13.80 14.39 14.56		

	Ti
Schreiner, 1928	Hydrochloric acid (HCl) + Ethyl alcohol (C ₂ H ₆ O)
M* n C F D	Maass and Mc Intosh, 1913
18°	% f.t. % f.t.
	7 1.1.
1.022 34027 34617 34200	0.0 -112.0 44.7 87.0 3.1 116.0 46.9 82.0
2.027 35038 35666 35223 3.016 35879 36556 36078	14.6 124.0 49.7 73.5
4.007 .36603 .37301 .36811 4.977 .37217 .37942 .37432	20.7 120.5 54.3 68.0
5.98337761 .38515 .37986	23.8 118.0 57.4 65.0 27.9 113.0 60.0 66.0
7,077 .38251 .39031 .38487 * molality of HC1	27.9 113.0 60.0 66.0 29.8 108.0 63.8 72.5 33.1 100.0 95.0 125.0
morarrey or ner	37.1 94.5 100.0 _112.0
	42.9 -91.0 (1+1)
Maass and Mc Intosh, 1913	
-89°	Gerrard and Macklen, 1956
1.7 0.67 51.0 24.4	mol% t solubility
4.0 12.5 54.6 12.2 6.5 46.2 60.0 16.6	59.31 40.1
10.8 85.1 66.5 8.0 13.6 121.2 71.5 8.0	57.73 34.0 55.06 24.4
16.9 137.8 78.1 30.5 21.2 172.5 81.5 49.8	55.06 24.4 52.78 15.6 49.48 3.0
16.9 137.8 78.1 30.5 21.2 172.5 81.5 49.8 26.2 161.4 83.9 56.1	12,10
28.3 149.3 75.0 77.0 31.7 122.1 95.5 63.5	
34.5 91.4 97.8 20.9	1 1 1
43.2 51.8	Perkin, 1894
	% d
	40 80
Archibald, 1912 and 1913	59.96 0.9897 0.9862
M* λ(HCl) M λ(HCl)	
- 89°	g 1
0.030 0.0528 0.947 0.3520 0.66 0.0405 1.16 0.511	Schreiner, 1928
.074 .0395 1.54 0.832 .120 .0420 1.44 sic 1.190	M* d n
.227 .0528 2.64 .498	C D F
.442 .0981 4.98 .587	1s ^{18°} series
.622 .1558 6.41 .457 .757 .2282 7.69 .199	0 _ 1,35980 1,36150 1,36582
*M = moles $CH_{14}O$ in 1000cc HC1	0.518 0.80706 .36590 .36769 .37217 1.022 .82070 .37075 .37265 .37728
-()) in d	1 2.024 .84573 .37915 .38118 .38610
M τ(λ) in %	4.115 .88892 .39211 .39431 .39957
-89° to -86°	5.049 .90605 .39650 .39877 .40418
0.343 1.21 0.943 2.68	
	0.510 0.80688 .36610 .36796 .37238
	1.019 82075 .37107 .37299 .37756 2.028 84573 .37958 .38159 .38647
	3.034 86785 38649 38861 39363 4.089 88909 39270 39489 40014
	4.872 .90342 .39627 .39855 .40389
	5.927 .92150 .40013 .40250 .40799 7.156 .93858 .40321 .40557 .41126
	* M = moles HCl in l liter solution.

HYDROCHLORIC ACID + PROPYL ALCOHOL

Gladstone and Hibbert, 1897 $\#$ molar refraction (HC1) $\#$ $\#$ $\#$ $\#$	Hydrochloric acid (HCl) + Propyl alcohol (C ₃ H ₈ O)
18° 61.0 12.85 12.97 13.18 67.6 13.04 13.25 13.41	Gerrard and Macklen, 1956 mol% t. mol% t.
67.6 13.04 13.25 13.41 75.0 13.38 13.66 13.77 87.6 13.88 14.07 14.25 62.2 12.85 12.92 13.23 67.1 13.04 13.10 13.41 77.73 13.44 13.51 13.81 86.76 13.63 13.72 14.03	59.59 42.0 51.79 12.4 57.47 34.2 50.78 8.5 55.22 25.6 49.31 2.5
Perkin, 1894 % (α)magn.	Hydrochloric acid(HCl) + iso-Propyl alcohol (C ₃ H _B O)
7.75°	Gerrard and Macklen, 1956
1.2991 Archibald, 1912 and 1913 M λ(HC1) M λ(HC1)	57.33 43.3 54.82 33.3 53.56 27.3 50.76 16.6 48.63 7.4
-89° 0.020 0.0191 1.40 0.267 .042 .0182 1.69 .361 .082 .0185 1.97 .505 .134 .0200 2.36 .645 .215 .0216 3.01 .799 .286 .0268 3.80 .902 .388 .0305 5.78 1.155 .518 .0378 6.41 1.045 .676 .0491 7.63 0.878 .885 .0798 8.33 0.803	Hydrochloric acid (HC1) + Butyl alcohol (C ₁₄ H ₁₀ O) Gerrard and Macklen, 1956 mol% t. mol% t.
1.140 .1405	60.24 45.0 51.94 13.7 57.73 35.8 50.59 8.0 54.73 25.0 49.43 4.0 53.28 17.9
_88.5° to _85.0°	
0.682 3.9 1.690 4.0	Willard and Smith, 1923
M = moles alcohol in l liter HCl .	mol% d mol% d
Maass and Mc Intosh, 1913	25° 100

Hydrochloric acid (HCl) + iso-Butyl alcohol (C ₄ H ₁₀ O)	Hydrochloric acid (HCl) + iso-Amyl alcohol (C ₅ H ₁₂ O)
Gerrard and Macklen, 1956	Perkin, 1894
mol% t. mol% t.	% d
60,20 46.4 52,02 14.9 56,61 33.3 51,37 12.4 54,35 24.3 49.80 5.9 53,30 19.1	4° 8°
53,30 19.1	71.97 0.9356 0.9325 74.55 0.9281 0.9242
	% t (α) magn.
Hydrochloric acid (HCl) + sec.Butyl alcohol (C ₄ H ₁₀ 0)	71.97 7.5 1.2403 74.55 8.8 1.2189
Gerrard and Macklen, 1956	
mo1% t. mo1% t. 55,77 39.8 50.69 18.3	Hydrochloric acid (HCl) + 3_Pentanol (C ₅ H ₁₂ 0)
53.67 30.9 48.80 10.2 52.37 25.5 48.39 8.1	Gerrard and Macklen, 1956
	mol% t.
Hydrochloric acid (HCl) + Amyl alcohol (C _f H ₁₂ 0)	54.68 43.4 53.96 33.0 53.25 29.9 50.53 18.0 48.01 7.2
Gladstone and Hibbert, 1897	
% molar refraction (HC1) H _α D H _β	Hydrochloric acid (HC1) + 2-Methylbutano1
22.79 12.71 12.88 13.10 18.33 12.91 13.07 13.31 10.55 13.41 13.55 13.83 7.36 13.47 13.48 13.82	($C_5H_{12}0$) Gerrard and Macklen, 1956
7,00 10,47 10,40 10,62	mol% t. mol% t.
	57.60 45.2 51.33 18.4 54.68 39.8 49.90 11.8
Archibald, 1912 and 1913	54.23 30.4 48.35 4.7 52.66 23.7
M λ (HC1) M λ (HC1) M λ (HC1)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Hydrochloric acid (HCl) + 4-Heptanol ($C_7H_{16}O$)
M* τ (λ.) in %	Gerrard and Macklen, 1956
-89 to -85°	mol % t mol % t
0.197 523 1.740 650	57.13 45.3 49.50 13.5 54.05 33.0 48.66 9.9 51.28 21.3
M = moles alcohol in 1 liter HC1.	31,20

* moles resorcinol in 1 liter HCl

Hydrochloric acid (HCl) + Capryl alcohol(C _B H ₁₈ 0)	Hydrochloric acid (HCl) + Benzyl alcohol(C ₇ H ₈ O)
- 1 1 1 1 105/	Gerrard and Macklen, 1956
Gerrard and Macklen, 1956	mol% t. mol% t.
mol% t. mol% t.	65.57 43.7 58.14 19.9
60.20 46.6 52.30 16.5 57.83 38.0 51.30 12.5 55.95 30.9 49.48 5.3 54.75 26.0	62.62 34.6 55.77 12.1 60.35 27.4 53.61 5.5
Gladstone and Hibbert, 1897 molar refraction (HCl)	Hydrochloric acid (HCl) + 3_Phenylpropanol (C ₉ H ₁₂ O)
H_{α} D H_{3}	Gerrard and Macklen, 1956
18°	mol% t. mol% t.
81.70 11.72 11.82 12.02 85.64 12.16 12.28 12.45 90.80 12.40 12.60 12.78	62.54 44.6 55,53 20.4 60.28 37.1 53,76 13.4 58.33 30.1 52.03 7.0 57.47 27,4
Hydrochloric acid (HC1) + 3:3:5_Trimethyl_n_hexanol (C ₉ H ₂₀ O) Gerrard and Macklen, 1956 mol% t,	Hydrochloric acid (HCl) + Phenethyl alcohol (C _B H ₁₀ O) Gerrard and Macklen, 1956
	mol% t. mol% t.
58.33 40.5 56.84 35.1 54.95 27.4 52.30 17.3 49.77 6.9	63.89 42.7 57.42 19.2 62.19 36.2 55.68 13.9 59.31 26.1 53.52 5.2
Hydrochloric acid (HCl) + Glycol ($C_2H_6O_2$)	Hydrochloric acid (HCl) + Resorcinol ($C_6H_6O_2$)
	Archibald, 1912 and 1913
O'Brien, Kenny and Zuercher, 1939	M* λ (HC1) M λ (HC1)
m* P ₁ m P ₁	-89° 0.0791 2.930 0.818 4.270 1.159 3.430 1.144 3.870 244 3.770 .469 3.610
1.33 0.0008 3.13 0.0079 2.27 .0025 4.66 .0357 2.45 .0032 6.57 .135	.457 4.110 .855 5.040
2.45 .0032 6.57 .135 2.72 .0046 6.63 .139 3.02 .0074 6.92 .172 3.07 .0075 8.78 .424	M* τ (λ) in %
3.07 .0075 8.78 .424 3.11 .0086	_85° to _89° 0.0730 _1.33
m+: molality of HC1	0.159 0.00 1.855 +13.00

Hydrochloric acid (HC1) + Acetic acid $(C_2H_4O_2)$

Gerrard and Macklen, 1956

mo1%	t.	
96.61 93.11 89.20 85.83 84.10	50.1 39.5 27.0 16.0 11.0	

Hydrochloric acid (HC1) + Propionic acid ($C_3H_6O_2$)

Baume and Georgitses, 1912 and 1914

mol%	f.t.	mol%	f.t.
100.0 89.9 89.5 83.1 72.2 66.5 64.1 60.8 60.6 58.2 46.5 45.4 43.2 38.4 37.0 36.9 33.7	-16.5 27.5 27.5 30.7 38.6 43.7 46.1 49.0 51.8 45.7 53.5 54.7 53.5 54.7 53.5	33.0 30.0 28.0 27.2 25.1 23.9 23.1 21.5 21.2 18.8 12.5 11.6 6.7 5.6 5.2 4.2 0.0	-64.8 69.2 71.7 74.1 76.6 75.9 80.3 83.4 83.0 86.1 93.9 96.0 98.4 101.3 111.0 113.2 112.8 -111.0

Hydrobromic acid (HBr) + Acetylene (C_2H_2)

Maass and Russell, 1918

%	f.t.	%	f.t.	
100 80.6 70.0 60.2 50.1 44.0 38.1 36.0 30.1	-81.8 82.5 85.7 88.2 93.2 97.3 101.3 103.7 -109.6	25.5 24.0 22.0 16.6 15.7 12.5	-113.1 115.2 117.6 125.2 126.0 120.2 115.0 -86.0	

Hydrobromic acid (HBr) + Allylene (C_3H_4)

Maass and Russell, 1921

%	f,t.	%	f.t.	
100 69.4 54.7 45.8 45.7 42.4 39.2 35.4 33.7	-105.0 112.3 121.5 129.6 129.5 129.1 127.2 126.1 -127.0	32.0 29.5 26.1 18.5 15.0 9.7 4.5 0.0	- 125 . 8 127 . 6 128 . 8 134 . 0 137 . 7 120 . 5 101 . 6 - 86 . 0	(1+1)

Hydrobromic acid (HBr) + Methylcyclohexane (C_7H_{14})

Maass, Boomer and Morrison, 1923

mo1%	f.t.	mo1%	f.t.	
0.0	-86.0	28,8	-101.9	
2.0	87.9	32.6	103.4	
4.0	89.9	37.5	105.3	
6.0	91.4	40.8	106.6	
7.9	92.5	43,4	107.6	
10.1	93.9	49.9	110.0	
13.0	95.0	54.2	111.8	
15,6	96.3	59.7	113.8	
19.6	97.8	100.0	-124.5	
25.2	~100.4			

Hydrobromic acid (HBr) + Benzene (C_6H_6)

Maass and Russell, 1918

%	f.t.	%	f.t.	
100	+5.4	48.0	-42.0	
94.1	+1.3	42.9	47.0	
87.1	-3.5	34.8	56.5	
85.5	-4.0	26.5	65.0	
72.95	-12.5	22.2	70.5	
66.4	-20.5	14.3	79.5	
61.8	-26.5	11.03	87.5	
58.0	-31.0	7.04	95.0	
53.4	-39.0	3.87	90.0	
51.18	-40.0	0.0	-86.0	

Hydrobromic acid (HBr) + Toluene (C_7H_8)

Maass and Mc Intosh, 1912

%	f.t.	%	f.t.	
0.0 3.3 6.5 9.4 12.4 15.3 19.1 20.7 25.4 27.8 35.3 37.0 40.2 43.3	-86.0 96.0 101.5 107.5 116.0 122.0 128.0 124.0 115.0 112.5 107.5 107.5	48.9 52.7 55.1 59.1 63.1 65.9 70.2 73.5 77.4 81.0 83.7 88.8 95.1 100.0	-98.0 94.0 92.0 90.5 88.5 87.0 (1+1) 87.0 88.5 89.5 94.0 100.0 98.0 -94.0	

Maass and Russell, 1918

		•		
%	f.t.	%	f.t.	
0.0 4.9 7.3 9.8 56.3	-86.0 91.6 95.8 101.5 -90.6	60.1 65.2 70.5 73.2 76.4 93.3	-89.0 88.0 87.6 88.3 89.0 -96.6	(1+1)

Hydrobromic acid (HBr) + Ethylbenzene (C_8H_{10})

Maass and Russell, 1918

%	f.t.	%	f.t.	
100 91.06 80.6 76.7 73.7 71.4 66.2 63.8 60.0 54.3	-92.4 97.7 103.6 - (-118 104.0 (-115 104.0 (-112 110.2 109.0 106.0 106.3	.2) 24.8	-108.8 112.2 116.7 120.5 125.2 125.0 105.8 96.5 90.8 -86.0	
(1+	1) f.t. =	-105.5		
(1+	2) f.t. =	-103.8		
*met	netahla			

Hydrobromic acid (HBr) + Propylbenzene (C_9H_{12})

Maass, Boomer and Morrison, 1923

mo1%	f.t.	mo1%	f.t.	
0.0 2.1 4.5 8.0 12.0 15.8 19.4 23.2 25.2 27.9 31.5	-86.0 88.3 92.6 97.9 107.8 119.4 116.8 115.4 114.4 113.5	35.3 38.1 41.6 46.2 50.1 54.3 58.5 62.6 65.5 100.0	-109.3 107.4 106.1 105.2 105.4 105.9 106.5 110.3 113.4 -145.0	(1+1)

Hydrobromic acid (HBr) + o-Xylene (C_8H_{10})

Maass, Boomer and Morrison, 1923

mo1%	f,t.	mo1%	f.t.	
0.0 3.1 6.6 12.1 14.9 19.0 25.3 28.1 30.8 34.7 38.7 42.7 46.0 49.3	-86.0 92.0 96.5 111.0 114.0 107.0 96.5 91.0 89.1 85.7 83.6 76.2 74.5 68.5	52.3 55.3 58.3 62.2 65.2 69.5 73.8 79.0 83.7 87.3 91.4 95.8 100.0	-65.5 64.5 61.5 57.5 56.0 52.5 48.5 47.5 45.5 44.0 40.0 -38.5	

Hydrobromic acid (HBr) + $m_-Xylene$ (C_8H_{10})

Maass, Boomer and Morrison, 1923

mo1%	f.t.	mol%	f.t.	
0.0	~86.0	51.8	- 7 5.5	
13.1	111.1	53.1	73.5	
24.8	88.6	54.8	72.7	
27.6	86.9	58.0	68.8	
35.6	83.7	63.8	65.0	
39.9	80.0	66.7	63,2	
41.8	79.0	71.0	60.9	
43.5	78.2	75.5	58.4	
44.8	77.7	81.4	56.4	
48.1	77.5	86.9	54.9	
49.3	-77.6	100.0	-54.0	

Hydrobromic acid (HBr) + p-Xylene (C_8H_{10})

Maass, Boomer and Morrison, 1923

mo1%	f.t.	mo 1%	f.t.	
0.0 4.5 7.0 10.6 20.3 25.5 31.1 34.8	-86.0 93.5 97.1 101.4 76.8 62.1 48.6 41.1	48.2 52.0 54.7 56.9 69.5 82.0 86.5 92.3	-20.8 15.9 13.8 10.8 -1.5 +5.7 9.4 11.5	
43,5	-26.0	100.0	15.0	

Hydrobromic acid (HBr) + Mesitylene (C_9H_{12})

Maass and Russell, 1928

%	f.t.	%	f.t.	
100 97.3 95.5 88.4 81.5 74.4 69.7 65.0 59.7 58.5 51.2	-53.5 56.5 57.5 65.5 68.5 66.5 64.5 63.0 61.5 61.7 -61.7	49.8 48.3 44.1 42.1 31.8 27.3 22.05 15.35 8.2 0.0	-62.2 62.5 67.5 68.4 82.0 90.0 103.5 105.0 98.5 -86.0	

Hydrobromic acid (HBr) + Chloroform (CHCl₃)

Maass and Mc Intosh, 1912

%	f.t.		f.t.	
0.0	-86.0	53.7	-92.0	
5.9	95.0	61.1	87.0	
10.9	101.0	73.4	78.0	
17.2	106.0	83.7	71.0	
38.6	105.0	85.0	69.5	
41.3	101.5	91.4	67.0	
46.0	-97.5	100.0	_62.5	

Hydrobromic acid (HBr) + Methyl ether (C_2H_60)

Maass and Mc Intosh, 1912

%	f.t.	Ж	f.t.	
0.0 1.3 3.0 6.1 15.2 23.6 26.2 26.8 27.7 30.0 31.6 35.7 37.6 42.2	-86.0 86.8 88.0 90.2 93.3 95.2 74.3 64.7 42.0 30.4 26.3 21.1 18.0 13.5 14.3	43.7 47.2 49.6 50.6 51.6 74.6 78.6 81.0 82.8 86.5 87.3 92.0 93.1 94.3 95.0 97.0 100.0	-14.9 -16.6 -18.4 -18.7 -19.7 -26.3 -32.5 -33.8 -35.5 -37.2 -46.3 -48.2 -61.0 -66.2 -77.3 -99.8 -138.0	

(1+1) f.t.= -13°

Hydrobromic acid (HBr) + Ether ($C_4H_{10}0$)

Mc Intosh, 1912

%	f.t.	%	f.t.	
100	-118	58.7	-43	
98.40	98	47.5	40	
97.82	92	31.3	46	
97.00	79	24.2	64	
91.80	69	20.2	78	
90:20	65	16.5	94	
88.5	61	14.3	100	
86.5	58,5	6.0	98	
84.6	54	4.5	95	
76.6	46	2.0	91	
70.1	-44	0.0	-86	

Russel and Sullivan, 1926	Hydrobromic acid (HBr) + Methyl alcohol (CH ₄ 0)
mol% d mol% d	Maass and Mc Intosh, 1912
25° 91.15 0.7946 38.60 1.444	% f.t. % f.t.
91.15 0.7946 38.60 1.444 84.20 .8532 31.17 .570 77.77 .9057 24.79 .668 76.25 .9220 17.12 .794 75.46 .9287 14.06 .835 55.35 1.118 10.61 .875 52.11 1.127 0.00 .937 48.77 1.277	0.0 -86.0 25.0 -13.5 1.6 87.5 28.7 12.8 4.7 94.0 35.0 33.9 5.7 97.0 35.6 44.4 10.8 85.0 42.8 54.5 12.1 72.4 45.5 -64.0 14.0 -58.0
	(1+1) f.t. = -12°
Hydrobromic acid (HBr) + Acetone (C _s H ₆ O)	
Maass and Mc Intosh, 1912	Archibald, 1907 and 1913
% f.t. % f.t.	M λ (HBr) M λ (HBr)
0.0	-80° 0.13
(1+1)	M τ (λ.) in %
Hydrobromic acid (HBr) + Ethyl acetate ($C_4H_8O_2$) Maass and Mc Intosh, 1912	-80° to -75° 5.88 2.5 8.00 4.2
% f.t. % f.t.	4.2
0.0 -86.0 31.8 -51.5 4.0 89.0 34.0 53.0 6.0 92.0 34.7 57.0 8.2 97.0 36.0 59.0 16.3 85.2 37.0 56.0 17.5 71.3 39.3 51.0 17.6 69.2 41.3 45.0	Hydrobromic acid (HBr) + Ethyl alcohol (C_2H_60)
1 18.6 69.2 43.8 41.0 I	Maass and Mc Intosh, 1912
10.2 67.1 44.8 39.0 20.2 63.0 47.0 37.0 20.9 61.0 48.9 36.1	% f.t. % f.t.
20.9	100.0 -86.0 67.6 -31.4 97.9 88.0 66.2 30.3 95.4 91.5 64.6 29.6 93.3 95.5 64.0 28.5 92.3 97.0 62.3 29.5 78.9 83.5 60.2 31.0 77.8 62.5 60.0 30.0 76.8 56.5 55.3 37.5 75.4 50.1 55.0 40.0 74.1 45.2 53.8 45.0 74.1 45.2 53.8 45.0 72.4 40.5 51.3 54.0 70.4 34.8 49.2 68.1 68.8 -33.3 48.9 -73.4 (1+1) f.t.= -30°
(5+2) f.t. = _52° (1+1) f.t. = _36°	

Hydrobromic acid (HBr) + Amyl alcohol (CyH ₁₂ 0)	Hydrobromic acid (HBr) + o_Cresol (C ₇ H ₈ O)
Archibald 1007	Archibald, 1907 and 1913
Archibald, 1907	M λ(HBr) M λ(HBr)
M λ (HBr) M λ (HBr)	- 80°
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.10 1.995 0.80 49.5 .13 2.450 1.00 87.7 .20 4.530 .20 129.4 .30 5.950 .30 150.8 .50 17.150 .50 195.1 .60 28.250
1.00 .6110	_80° to _75.5°
	-1.527 -2.8
[]	
Hydrobromic acid (HBr) + Allyl alcohol (C ₃ H ₆ O)	
Archibald, 1907 and 1913	Hydrobromic acid (HBr) + Acetic acid ($C_2H_{ m u}0_2$)
M λ (HBr) M λ (HBr)	7000
-80°	Chichibabin, 1906
0.06 0.780 1.20 24,54 .08 .755 .30 29,90 .10 .725 .40 45,50 .20 .655 .60 60,50 .30 .815 .80 115,50 .50 1,665 2.00 185,80 .60 2,385 .40 270,00	(1+2) f.t. = 7-8° Archibald, 1907 and 1913
.80 4.510 .80 387.00 1.00 9.150	M λ (HBr) M λ (HBr)
7.00 9.130	_ 80°
M τ (λ) in %	0.08 5.68 0.60 171.0
-80° to -73,2°	$\begin{bmatrix} 10 & 6.80 & .70 & 215.0 \\ 15 & 11.21 & .80 & 252.0 \end{bmatrix}$
5.92 3.0	20 18.4 1.00 332.0 25 29.8 .20 408
	30 44.8 .40 465
	35 62.5 .50 491 .40 81.4 .60 511
Hydrobromic acid (HBr) + Resorcinol (C ₆ H ₆ O ₂)	.45 103.0 .70 518 .50 123.5 .80 524
	M τ(λ) in %
Archibald, 1907 and 1913	-80° to -73°
M λ (HBr) M λ (HBr)	0.233 2.62
-80°	1.750 2.72
-80° 0.008	

Hydroiodic acid (HI) + Methyl ether (C_2H_60)

Maass and Mc Intosh, 1912

%	f,t.	%	f.t.	
100.0 98.8 96.0 88.3 84.1 79.8 78.1 (1+1)	-50.9 53.4 64.1 77.0 47.5 40.7 -35.7 f.t. = -2	76.4 76.2 70.1 51.8 28.2 25.5 15.3	-30.8 26.3 22.0 25.0 35.0 28.5 -56.0	

Hydroiodic acid (HI) + Aniline (C_6H_7N)

Sakhanov, 1913

% (1+1)	d	η	
******	25°		-
0. 2.04 4.21 9.04 14.05 18.00	1.018 .027 .039 .063 .089	3640 3970 4500 5620 7400 8800	
20.48	.125	10280	

M (1+1)	λ	M (1+1)	λ
	2	5°	
1.13 1.09 0.752	3.07 3.19 3.46	0. 192 0.0949 0.0356	1.74 0.82 0.50

Heavy water (D_20) + Methyl acetate ($C_3H_4O_2$)

Rabinovich, Fedorov and al., 1955 (fig.)

t	mc	1%	t	mo	1%	
	L ₁	L ₂		L ₁	La	
0 20 40 60	5 5 5 5	83 78 73 65	80 100 114	6.5 9.5 24.0	57 45 24.0	

Heavy water (D_2O) + α -Picoline (C_6H_7N)

Poppe, 1935

P Kg	C.S.T.inf.	P Kg	C.S.T.sup.
5.75 21.0 46.50 71.75 81.75 86.95	92.25 93.40 95.50 98.60 100.0 101.0	31.25 46.50 71.75 81.75 86.75	110.80 109.60 106.65 105.05 103.30

Heavy water (D_20) + β -Picoline (C_6H_7N)

Cox, 1952 (fig.)

%	C.S.	г.	Ж	c.s	т.
	inf.	sup.		inf.	sup.
46 50 55 60 65	83 58 48 42 40	83 106 114 118 118	70 75 80 85 88	39 39 38 45 65	117 116 112 102 65

Heavy water ($D_20)$ + Ethyl deuteroalcohol (C_2H_fD0)

Rabinovich, Fedorov and al., 1955 (fig.)

t	mo	1%	t	mo]	1%	
	L,	L ₂		L ₁ _	La	
2 20 40 60	1 1 1 1	- 53 50	80 100 120 131.1	1 2.5 3 12	44 37 29 12	

Heavy	water (Dao)	+ o_Deut	eropheno	1 (C ₆ H ₅ D0)
Rabin	ovich, Fe	ederov	and al.,	1955 (fig.)	
t	mo19	6	t	mo	1%	
	L ₁	L_{a}		Lt	L_2	
		0=			24.5	
2 0 40	1	37 32	60 70	2 3	26.5 22	
50	ĩ	30	70 79	8	8	
Heavy	water ()	0.0) :	Rutyric	acid (C4H8O2)	
		- 2 - ,	240,110	4014 (-48-2	
n	100	0				
	son, 193	8				
%			sat.t.			
23,44			21.80			
38.03 51.10			21.28 17.20			
01.10			17,20			
Heavy	water (D ₂ 0)			terioacid	
			(С ₄ Н ₇)		
Rabino	ovich, Fe	dorov	and al.,	1955 (fig.)	
t	mo1%		t	mol		_
-	L ₁	La	·	L ₁	ρ L ₂	
	<u> </u>	-ĸ		~1		
-2 +5	4	52	35 45	7.5	32 20	
15 25	4 5 6	46	45 45.5	11	20 11	
25	6	39				
						=
Heavy	water (D20)	+ Isobu	tyric ac:	id (C ₄ H ₈ O	2)
Patte	rson, 19	38				
	·		1			
%	sat.t	<u>. </u>	%	sat.t.		
52.1	36.40)	26.9	41.23		
46.6 38.9	38.64 40.21		26.9 26.2 22.3 15.8 15.3	$41.05 \\ 40.20$		
34.1	40.81 41.23	:	15.8	29.00 28.80		
29.9 28.1	41.23 41.40	; ,	15.3	28.80		
20,1	71,70					
						=

o-DEUTER	OPHENO	L				719
Hydroge	n peroxio	ie (H	(g0g	+ Et	her (C	₄ Н _{1 О} О)
Maass a	nd Hatche	er, 19	22			
56%	sat.t.=	= 0°	·			
Matheso	n and Maa	iss, 1	929			
%	f.t.		%		f.t.	
41.6 44.3	-1.2 -(L ₁ +l -4.8 -5.1	-2)	47.8 59.2 66.5 71.5		-6.0 -16.5 -33.1 -47.6	
Mironov	, 1955 (fig.)	-			
%	f.t.	%	f.	t.	sa inf.	t.t. sup.
79 E 70	- 116 - 130 - 60	39.1 36 22	- 2 - 2 - 2 - 2		-2 -25	-2 +15 +46
60 50	-20 -4	$\frac{10}{3,8}$	-2 -2		_	+28 -2
40	-2	3.8 3.0	- 1 0	.5	-20	-
		e (H ₂ (02) +	Sacci	narose ((C ₁₂ H ₂₂ O ₁₁)
Hatcher %	f.t.		%		f.t.	
3.88 11.64 18.66 25.16	-1.97 -2.60 -3.47 -4.72)	30.34 36.82 42.86 50.00		-5.70 -7.57 -10.30 -14.32	
Hydrog	en perox	ide (H ₂ O ₂) + E	ther (C4H100)
Linton	and Maa:	ss, 19	31			
	d	ε		%	d	ε.
100 94.8 90.0 82.2	0.736 .769 .791 .834	4.6 6.7 8.7 13.2	,	73.7 61.8 53.7 41.8	.95 .99	4 26.9 7 33.8

Hydrogen peroxide (H_2O_2) + Butylamine ($C_4H_{11}N$)

Matheson and Maass, 1929

mo1%	f.t.	mo1%	f.t.	
1. 29 4. 61 8. 37 12. 5 23. 0 24. 0 27. 2 30. 0 33. 6	- 2.7 - 9.0 -14.0 -29.0 0 - 2 -10 -10	46.3 51.4 56.0 59.5 62.7 65.4 69.7 71.4 73.0	-13 19 23 18 12 9,5 9,1 13	
39.6 43.5	- 9 -11 (1+2)	75.8 77.9	16.5 -20.5 (2+1)	

Hydrogen peroxide (H_2O_2) + Butylamine tert. $(C_4H_{11}N)$

Matheson and Maass, 1929

mo 1%	f.t.	mo1%	f.t.	_
1.69 3.82 5.47 8.40 9.22 12.7 13.3 16.6 21.9	-2 -5 -7.5 -15 -18 -12 -10.5 -3 +15.5	38.7 39.9 49.9 53.1 55.5 58.5 60.8 63.0	+16.5 +17 +17 +15.4 +13.5 +10 +7 +8 +73	
24. 9 24. 2 27. 7 28. 2 31. 2 34. 5 36. 8	+21 +25 +24 +26 +23 +20 (1+2)	66.6 69.3 72.2 74.4 76.4	+55 +50 +1.5 -0.5 -50	

Hydrogen peroxide (H_2O_2) + Diethylamine $(C_{2}H_{1}N)$

Matheson and Maass, 1929

mol%

3.05	-8.4
11.30	-35.0

Hydrogen peroxide (H_2O_2) + Tripropylamine $(C_9H_{21}N)$

Matheson and Maass, 1929

mo1%	f.t.	
3.0 9.1 12.1	-4 -14.5 -30	

Hydrogen peroxide ($H_2 O_2$) + Dimethylaniline $(C_8H_{11}N)$

Matheson and Maass, 1929

mo1%	f.t.	
6.35 12.17	-2.3 -30.0	

above 12.17mol% - L_1+L_2

Hydrogen peroxide (H_2O_2) + Piperidine ($C_4H_{11}N$)

Matheson and Maass, 1929

mol%	f.t.	
5.6 11.1 12.4	-10.3 -32.5 -34.0	

Hydrogen peroxide (H_2O_2) + Methyl alcohol (CH₄0)

Matheson and Maass, 1929

mo1%	f.t.	mo1%	f.t.	
5.6	-1.7	28.3	-18.6	
13.2	-6.4	33.2	-22.2	
18.4	-10.2	43.8	-37.8	
25.2	-15.3	51.5	-49.3	

				37.90		
Hydrogen sulfide (H_2S) + Methane (CH_{14})	ļ. <u></u> _			30	40	50 mo1%
Reamer, Sage and Lacey, 1951	Dew	(31.8)	(37.2)	(44.9)	(56.5)	(73,3)
P Kg Molar volume (cc/mole) 10 20 30 40 50 mol%	point	632	536	438	344	238
	Bubble point	(77.6) 49.47	(108,2) 54,90	62.5	(134.2) ^a 76.2	(121.4) ^a 111.6
4.4°						
Dew (13.6) (15.7) (18.2) (22.0) (27.2) point 1498 1300 1102 882 738	14 28	1711 752	1731 782	1752 808	1773 832	1790 850
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	28 42 56	-	-	4 7 9 -	509 343	533 3 72
Bubble (59.4) (94.9) (116.1) (129.9) (136.6) point 43.63 46.60 50.42 55.42 62.74	70 88	48,77	-	-	-	270
	105.5 123	48.01 47.46	- 53.24	-	-	109.3
14 _ 1475 1506 1536 1566	140.5	47.00	51.84 50,86	58.9 56.9	7 72.6 3 67.2	91.6 81.2
42	158 176	46.62 46.23	50.14	55.4	8 63,6	74.9
70 43.33	193 211	45.90 45.58	49.55 49.01	54.2 53.4	6 59.08	66.9
105.5 42.61 46.02	246 281	45.07 44.57	48.10 47.26	51.9 50.5	8 54.59	59.39
140.5 42.03 44.83 48.55 53.98 61.79	316 352	44.13 43. 7 5	46.57 46.00	49.4 48.6	7 52.93 0 51.63	57.02 55.15
176 41.68 44.10 47.17 51.18 56.91	422	42.98 42.30	45.17	48.6 47.2 46.0	7 49.71 19 48.21	52.40
193 41.53 43.89 46.76 50.46 55.44 211 41.40 43.63 46.42 49.91 54.34	492 563	41.70	43.39	45.0	7 46.97	48.98
246 41.15 43.23 45.77 48.79 52.56 281 40.92 42.68 45.17 47.82 51.17	633 703	41.17 40.72		44.1 43.4		
281 40.92 42.68 45.17 47.82 51.17 316 40.69 42.56 44.59 47.01 49.85 352 40.44 42.17 44.09 46.34 48.88						
422 39,94 41,55 43,23 45,21 47,35 492 39,50 40,95 42,47 44,13 46,17	! }					
563 39.04 40.40 41.80 43.29 45.03	P Kg		molar	volume		
633 38.64 39.85 41.18 42.61 44.13 703 38.30 38.41 40.63 41.97 43.34		60	70	80	90 mo1%	6
* The figures in brackets are dew point or bubble point pressures	14 28 42	1804 865 551	1812 876 564	18 22 885 569	1829 892 581	
a-retrograd dew point pressure	56 70	392 295	407 312	418 3 2 4	430 33 2	
P Kg molar volume	88 105.5	218	237 187	249 200	259 209	
60 70 80 90 mo1%	123 140.5	167.0 134.5 113.0	153.4 130.0	166,2	175.9 151.3	
Dew (35,3) (56,6)	158	98.0	113.2	124.0	133.2	
point 539 326	176 193	87.8 81.0	100.8 91.7	100.7	119.7 108.9	
Bubble (135.9) ^a (116.7) ^a	211 246	75.9 69.21	85.0 76.1	83.0	100,5 88,8	
point 76.1 110.7 -	281 316	64.7 61.41	70.1	70.3	80.5 74.5	
14 1582 1594 1604 1614 28 737 755 767 776	352 422	58.90 55.28	62,7	3 61.36	70.3 64.2	
42 - 473 487 497 56 - 329 346 358	492 563	52.90 51.10	55.2	5 57,75	59,99	
70 261 275	633	49.56	51.3	1 5 2 .93	3 54.60	5
105.5 - 149.2 168.3	703	48.18	49.6	9 51.25		
123 - 102.7 121.2 136.7 140.5 73.3 87.4 102.8 116.7 158 67.9 78.5 90.6 102.8						
140,5 73,3 87,4 102,8 116,7 158 67,9 78,5 90,6 102,8 176 64,2 77,0 82,8 93,0						
JI 193 61.64 68.3 /8.1 85./ H						
246 56.79 61.09 66.8 72.4						
281 54.64 57.78 62.2 66.6 316 53.02 56.19 58.95 62.6						
11 357 5171 54.47 57.40 60.57 11						
492 47,96 49,88 51,77 53,86 563 46,67 48,41 49,80 51,82						
422 49.57 51.82 54.17 56.64 492 47.96 49.88 51.77 53.86 563 46.67 48.41 49.80 51.82 633 45.60 47.15 48.62 50.18 703 44.71 46.01 47.39 48.75						
<u> </u>						

HYDROGEN SULFIDE + METHANE

	10	20	71.1° 30	40	50 mo1%			-	104.4°		
Dew	(63.9)	(76.8)	-	-		P Kg	10	20 mc	olar vol 30	ume 40	50 mo1%
l	284.1 (97.6) 57.56	230.4 (116.7) 77.1	<u> </u>	-	-	14 28 42	2179 2 1034 1 649	1048 664	2206 1063 680	2222 1079 695	2229 1088 708
14 28 42 56 70 88 105.5 123 140.5 158 176 193 211 246 281 316 352 422 492 563 633 703	1941 904 543 355 - 60,43 57,41 55,53 54,21 53,18 52,32 51,66 50,49 49,55 48,67 47,98 46,65 45,57 44,71 43,96 43,31	1957 921 567 386 271	1976 940 588 410 300 209 150.5 111.5 91.3 80.2 73.4 69.0 65.9 61.32 58.23 56.05 54.41 52.03 50.32 48.87 47.52 46.52	1990 856 607 432 325 240 181.9 142.5 116.2 99.5 88.7 64.1 60.93 58.59 55.27 52.93 51.11 49.58 48.28	2005 972 623 449 345 261 200 164.5 136.9 117.4 100.4 94.1 86.8 70.8 66.5 63.3 58.71 55.72 51.68 50.07	42 56 70 88 105,5 123 140,5 158 176 193 211 246 281 316 352 422 492 563 633 703 P Kg	649 454 333 226 144.5 106.8 89.3 77.9 70.4 65.5 62.3 59.02 56.61 54.72 53.27 51.24 49.56 48.21 47.15 46.28	476 353 188 145.2 117.5 100.2 87.8 79.4 73.5 66.8 62.6 59.71 57.65 54.53 52.28 49.18 48.06 molar 70 2300 1105 726 536	489 372 277 213 171.4 141.6 120.2 105.1 86.2 76.0 69.7 65.5 62.4 58.15 55.23 53.07 51.38 50.03 volume 80	508 389 296 234 191 160.8 138.2 121.3 108.4 98.8 86.0 77.4 71.7 67.8 62.26 58.47 55.3.69 52.10	517 402 311 250 208 176.2 152.7 134.8 121.0 110.5 95.4 78.5 61.87 58.56 61.87 58.56 56.13 54.13
28 42 56 70 88 105.5 123 140.5 158 176 193 211 246 281 316 352 492 563 703	181.	995 647 474 372 237 231 1 193 9 165.2 165.3 116.3 3 128.5 116.3 93.1 5 106.8 83.8 4 93.1 77.4 4 72.6	1001 654 481 380 295 240 202 175.0 153.5 114.3 114.3 114.9 89.5 82.8	2044 1007 661 489 392 303 248 210 182.5 161.1 145.7 131.6 121.3 94.5 87.2 87.2 66.6 62.5 59.54 56.97		80 88 105,5 123 140,5 158 176 193 211 246 281 316 352 422 4963 633 703	322 262 220 189 164.7 131.8 120.5 103.5 70.5 65.2 65.2 65.2 65.2	89.6 83. 74. 68.	338 278 236 205 8 181 2 162 3 147 6 134 6 116	34 28 24 .0 18 .0 16 .0 15 .8 14 .6 12 .8 9 10 .4 9 .3 7	14 34 12

P Kg		molar vol			123	177.2	198	217	2 33	245
14 28 42 56 70 88 105.5 123 140.5 158 176 193 211	2449 1209 796 581 465 366 301 254 220 193 172.0 155.3 141.8 107.8 97.4 89.8 79.3 72.2	2454 2 1215 1 803 596 472 373 308 261 227	457 2219 19807 601 477 378 313 267 2232 206	90 mo1% 	123 140.5 158 176 193 211 246 281 316 352 422 492 563 633 703	177.2 141.2 141.2 100.7 90.1 82.7 73.1 67.3 63.4 60.75 56.81 54.25 53.32 50.57 49.20	198 163.6 139.2 121.5 108.2 98.1 84.2 75.8 70.3 66.6 61.12 57.56 55.06 53.07 51.44	182.9 157.7 138.5	199 172.7 152.1 136.2 123.6 105.4 93.3 84.9 78.8	211 184.0 163.3 146.8 133.6 1100.8 91.5 75.0 68.7 64.1 60.93 58.12
246 281 316	121.8 107.8 97.4	128.0 113.4 102.3	133,0 118,1 106,7	137.4 122.5 110.8	P Kg	mo1%		molar vo		
352 422	89.8 79.3 72.2	94.3 82.8 75.3	98.2 86.2 78.1	101.8 89.2 80.6		v	L 4.4°	<u>v</u>	L	
492 563 633 703	63.5 60.99	69.8 65.5 62.5	72.2 67.6 64.0	189 172.5 158.7 137.4 122.5 110.8 101.8 89.2 89.6 74.3 69.7 65.9	11.88 14.1 17.6 21.1 24.6 28.1	0.00 13.71 27.83 38.96 46.04	0.00 0.57 1.32 2.12 2.84 3.54 4.24	1705 1448 1159 963 820	41.29 41.41 41.57 41.75 41.92	
P Kg		molar volu			28.1 31.6 35.2	51.26 55.51 58.79	3,54 4,24 4,93	713 629 562	42.08 42.24 42.39	
Dew	10 20 (63.9) (76		40	50 mo1%	31.6 35.2 42.2 49.2	63.94 67.55	6.36 7.83	459	42.73	
point	284 22				56.2 63.3 70.3	69.89 71.41 72.42	10.83 12.50	284 248	43.67 44.31	
Bubble point	(97,6) (108 55,56 77		-	-	70.3 77.3 84.4 87.9 91.4	72.99 73.21	14.33 16.35 17.50	218 191 177.9	44.84 45.46 45.80	
14 28 42 56 70 88 105.5 123	2613 262 1272 128 825 601 61 466 47 358 37 284 29 232 24 194 20	8 489 0 381 8 310 6 258	2645 1305 857 634 499 391 320 267 231	2651 1312 865 642 507 400 328 276 240	91.4 98.4 105.5 112.5 119.5 123.0 126.5 133.6 137.0	0.00 13.71 27.83 38.96 46.04 55.51 58.79 67.55 69.89 72.42 72.42 72.99 73.19 73.19 68.28 66.30 55.00	4.93 6.36 7,83 9,30 10,83 12,50 14,33 16,35 17,50 24,50 27,98 32,40 34,92 4,01 55,00	385 329 284 248 218 197. 9 147. 9 147. 3 132. 1 117. 5 99. 6 93. 1 78. 2	46.18 47.07 48.19 49.56 51.52 52.72 53.75 57.83 68.20	
140.5 158 176 193	164.0 17 141.5 15	9.6 192 6.9 168.7		211 188			37.8			
193 211 246 281 316 352 422 492 563 633 703	164.0 17 141.5 15 124.1 13 111.2 12 93.8 10 82.8 9 75.8 8 70.9 7 64.3 6 60.12 6 57.25 6 55.00 5 53.13 5	9.6 221 9.6 192 6.9 168.7 9.1 150.5 5.3 136.0 101.6 4.0 91.6 4.0 91.6 84.2 9.4 74.5 9.4 74.5 77.6 84.2 9.4 68.3 77.6 60.55 5.4 58.00	202 179.0 160.8 146.1 124.4 109.5 98.6 90.8 79.3 72.3 67.1 63.4 60.56	169.6 154.6 132.3 116.4 104.8 96.4 83.9 76.1	27.7 28.1 31.6 35.2 38.7 42.2 49.2 56.2 63.3 70.3 77.3 84.4 87.9 91.4	0.00 1.17 9.63 16.42 22.03 26.88 34.16 39,76 43.96 47.07 49.23 50.79	0.00 0.07 0.67 1.28 1.90 23.85 5.23 68.28 9.96 8.28 9.182 13.90 18.85 21.92 25.32 27.25 29.40	729 718 635 569 514 468 396 342 297 260 230	45.66 45.69 45.85 46.04 46.27 46.47 46.47 47.46 48.05 48.71 49.46	
	13	37.8°			84.4 87.9 91.4	50.79 51.30 51.82	11.82 12.82 13.90	205 194 183.5	50.33 50.81 51.38	!
P Kg	10 20	molar volum 0 30	e 40	50 mo1%	98.4 105.5 112.5	50.79 51.30 51.82 52.40 52.55 51.95 50.58 49.47 47.97 45.80	16.20 18.85 21.92 25,32	165.8 144.9 130.7 115.5	50. 33 50. 81 51. 38 52. 63 54. 20 56. 14 58. 67 60. 23	ļ
14 28 42 56 70 88 105.5		56 1180 51 764 44 557	2433 1192 776 570 475 347 279	2442 1202 787 581 457 358 291	119.5 123.0 126.5 130.0 133.6 134.06	49.47 47.97 45.80 41.90 38.80	27.25 29.40 31.85 35.78 38.80	107.6 99.8 91.2 80.2 73.9	64.80 69.00	

71.1°	28.90 mo1%
	21.1 1.55 - 0.6390 -
54.75 0.00 0.00 331 53.57 56.2 1.96 0.31 323 53.78	1 24.6 8.30 19.6 0.0423
59.7 5.92 0.98 304 54.23 63.3 9.46 1.67 287 54.85	31.1 20.05 29.7 35.2 26.30 34.35 .5749 .0615 38.7 30.00 38.55
70.3 15.53 3.09 256 55.75	28.1 14.45 24.8 .6098 .0487 31.1 20.05 29.7 . 35.2 26.30 34.35 .5749 .0615 38.7 30.00 38.55 .
84.4 23.67 6.22 201 58.31 87.9 25.34 7.20 186.7 59.17	42.2 34.50 42.35 .5541 .0785 45.7 38.55 45.9 .5254 .0950
87.9 25.34 7.20 186.7 59.17 91.4 26.46 8.14 174.3 60.06	49.2 42.55 49.35 .5254 .0950 52.7 46.40 52.65
84.4 23.67 6.22 201 58.31 87.9 25.34 7.20 186.7 59.17 91.4 26.46 8.14 174.3 60.06 98.4 28.11 10.21 146.5 62.15 105.5 27.75 12.45 121.8 62.15 112.5 25.80 15.47 101.1 68.90	38.7 30.00 38.35
70.74 20.11 10.12 121.8 62.15 105.5 27.75 12.45 121.8 62.15 112.5 25.80 15.47 101.1 68.90 116.0 22.95 18.30 87.3 74.2 116.7 20.90 20.90 81.0 81.0	63.3 56.95 61.45 .4602 .1426 66.8 60.05 64.05
116.7 20.90 20.90 81.0 81.0	70.3 63.00 66.35 .4030 .1810
mol% PKg t PKg t PKg t	73.8 66.50 68.552127
critical max. temp. max. press.	49.99 mol%
state state state	24.6 3.0 - 0.5573 -
10 103.5 87.9 96.3 90.5 104.9 85.2	28.1 8.9 14.7 .5387 0.0511 31.6 14.3 19.4 - 35.2 19.3 23.95 .5042 .0668 38.7 23.85 28.0 - 4710 - 3820
1 20 115 8 72 5 00 5 80 6 117 4 60 1 l	31.6 14.3 19.4
40 134.7 35.4 103.0 55.8 134.6 37.3	38.7 23.85 28.0
100.1 -5.0 97.1 25.0 100.4 0.1	42.2 28.1 31.85 .4719 .0863 45.7 32.1 35.4
70 - 89.8 9.4	56.2 42.75 45.0 .4005 .1390
	56,2 42,75 45.0 .4005 .1390 59,7 46.1 47.85 .3737 .1602 63,3 49.4 50.4 .3252 .1943
Hydrogen sulfide (H_2S) + Ethane (C_2H_6)	66.94 mol%
Kay and Brice, 1953	24.6 +0.65 +2.35 0.4978 0.0458 28.1 4.45 7.9 .4803 .0540
mol% critical	1 31.6 11.7 12.95 .4615 .0625
t PKg d	35,2 16,35 17,45 .4464 .0718 38,7 20,85 21,85 .4303 .0812 42,2 25,0 25,9 .4139 .0929
	38.7 20.85 21.85 .4303 .0812 42.2 25.0 25.9 .4139 .0929 45.7 28.95 29.8 .3957 .1065 49.2 32.6 33.35 .3761 .1217
0.00 99.92 91.19 0.3465 11.03 87.24 85,56 .3351	1 49.2 32.0 33.33 .3/01 .121/
11 28 90 68 32 75 36 3125 1	52.7 36.1 36.8 .3502 .1421 56.2 39.35 39.65 .3111 .1762
40,99 50,62 64,37 .2792 66,94 40,76 58,42 .2528 77,79 36,39 54,53 .2380 89,01 33,47 51,85 .2256 100,00 31,97 49,72	77.79 mol%
89.01 33.47 51.85 .2256	21.1 -6.35 -6.1
100.00 31.97 49.72	1 44.0 0 0561
PKg t d	31.6 10.55 10.8 .4293 .0649 35.2 15.3 15.55 .4136 .0737
bubble dew L V point point	35.2 15.3 15.55 .4136 .0737 38.7 19.7 20.0 .3961 .0844 42.2 23.85 24.1 .3790 .0974 45.7 27.8 27.9 .3610 .1126
11,03 mol%	45.7 27.8 27.9 .0010 .1120
17.6 3.65 - 0.7352 -	49.2 31.35 31.45 .3391 .1309 52.7 34.8 34.85 .3023 .1594
31 7 11 4	89.01 mol%
28.1 25.0 33.85 .6888 .0482	28 1 5.0 5.3 0.4221 0.0562
35.2 35.9 43.45 .6604 .0615 38.7 40.65 47.75 _	28.1 3.0 3.0 10.4 14051 .0657 31.6 10.3 10.4 14051 .0657 35.2 14.95 15.1 .3863 .0753
42.2 45.2 51.70 .6336 .0758	38.7 19.4 19.55 .3719 .0865
42.2 45.2 51.70 .6336 .0758 45.7 49.5 55.55 49.2 53.5 59.20 .6074 .0913 52.7 57.95 62.65 56.2 61.1 65.95 .5799 .1089 59.7 64.55 69.10 63.3 67.7 72.10 .5515 .1302	42.2 23.6 23.65 .3535 .0997 45.7 27.4 27.45 .3312 .1176 49.2 31.0 31.05 .2986 .1426
52.7 57.95 62.65 56.2 61.1 65.95 .5799 .1089	49.2 31.0 31.03 .2780
59.7 64.55 69.10	
# 00.8 /I.U /3.33	
73.8 77.1 80.30	
8 80.8 82.4 85.20 _	
84.4 85.65 87.10 .3949 .2431	

HYDROGEN SULFIDE + PROPANE

mol %	t	mol	%	t	Hydrogen sulfide (H_8S) + Propane (C_3H_8)
	bubble point p	dew point po	bubble nt point	dew point	Gilliland and Scheeline, 1940
1		14.1 Kg/cm ²			t mol% t mol%
10	+10.3 - 4.1	+10.3 60 + 7.85 70	-20.2 -21.0	-16.1 -19.5	L V L V
20	-11.1	+ 3.8 80	-21.4	-21.0	27.3 atm,
30 40	-14.9 -17.2	- 1.1 90 - 6.2 93	-21.5 -21.7	-21.5 -21.7 Az	
50	-18.8	- 6.2 93 -11.1 100	-20.6	-20.6	67.8 96.3 87.8 53.9 75.9 62.1 65.0 94.6 84.1 51.1 66.8 50.1
		21.1 Kg/cm ²			34.0 atm.
0	+26.1	+26.1 60	- 4.9	- 1.0 - 4.65	82.2 98.6 97.9 62.8 60.5 45.3 76.7 91.9 87.0
10	+12.45 + 5.4	+22.6 +18.2 80	- 5.9 - 6.4	- 4.65 - 6.1	40.9 atm.
20 30	+ 1.15	+13.45 89	6 - 6.45	- 6.1 - 6.45 Az - 6.55	1
40 50	- 1.55 - 3.35	+ 8.55 90 + 3.4 100	- 6.55 - 5.8	- 6.55 - 5.8	93.9 94.5 92.4 78.3 65.8 54.9 91.7 92.2 89.9 70.0 53.5 40.8
	5,00				
	. 30 3	28.1 Kg/cm ²	. ~ .	.10 **	
10	+38.3 25.8	+38.3 60 34.3 70	+ 7.4 6.1	$^{+10.35}_{7.15}$	Kay and Rambosek, 1953
20 30	25.8 18.65 14.0	29.65 80 24.3 87	5,15 4.9	5.4 4.9 Az	t P d P d
40	11.0	19.3 90	5.0	5.0	L V dew p. bubble p. L V
50	8.95	14.7 100	6.05	6.05	100% 89.84%
		35.2 Kg/cm ^R			-1.1 9.90 0.8512 - 10.55
0 10		48.7 60 43.95 70	+ 17.35 16.0	+19.7 16.85	
20	30.0	39.0 80	15.1	15.35	# 15 / 15 /5 PAO/ 1/ AO 1/ AT #541
30 40	25.35 21.95	33.8 84. 28.45 90	5 15.0 15.2	15.0 Az 15.2	10.0 13.53
50	19.25	24.0 100	16.0	16.0	32.2 23.63 .7621
		42.2 Kg/cm ²			18.0 18.0 18.0 18.5 18.79 740 10.03 121.1 18.0 18.5 18.79 740 10.03 126.7 20.0 7785 21.23 21.5 7257 0.384 32.2 23.63 7621 24.09 24.30 7105 0.445 37.8 26.85 7472 0.0465 27.31 27.45 6.942 0.509 43.3 30.36 7307 0.532 30.79 30.99 6776 0.576 43.3 23.23 23
0	+57.6 +	57.6 60	+26.2	+27.95	1 40.7 34.20 .7044 .0004 34.71 34.91 .0003 .0050 54.4 38.40 .6066 0602 38.02 30 12 6417 0747
10 20	46.0 38.8	52.35 70 47.1 80	24.65 23.55	25.3 23.7	60.0 42.95 .6779 .0795 43.42 65.6 47.87 .6576 .0897 48.41 43.59 .6215 .0855 71.1 53.17 .6360 .1025 53.76 48.65 .5999 .0982 76.7 58.89 .6119 .1179 59.34 53.93 .5751 .1138
30	33.05	41.8 82.	3 23.5	23.5	71.1 53.17 .6360 .1025 53.76 48.65 .5999 .0982 76.7 58.89 .6119 .1179 59.34 53.93 .5751 .1138
40 50		36.4 90 31.8 100	23.65 24.45	23.65 24.45 Az	71.1 53.17 .6360 .1025 53.76 48.65 .5999 .0982 76.7 58.89 .6119 .1179 59.34 53.93 .5751 .1138 82.2 65.08 .5855 .1374 65.61 59.65 .5482 .1320
					82.2 65.08 .5855 .1374 65.61 59.65 .5482 .1320 87.8 71.75 .8451 .1618 72.34 65.80 .5158 .1570 93.3 78.97 .5126 .1959 78.87 72.48 .4742 .1947 .198.9 86.76 .4269 .2723 78.87 .3268 .3268
0		56.2 Kg/cm ² 72.35 50	+42.75	+45.0	98.9 86.76 .4269 .2723 - 78.87 .3268 .3268
10	61.9	66.5 60	40.45	41.45	100.0 88.27 .3449 .3473
20 30	54.65 49.6	60.75 70 55.1 71.	38.9 7 38.65	39.05 38.65 Az	
40	45.65	49.8			t P d dew bubble L V
		70.3 Kg/cm ²			point point
0	+84.8 +	84.8 34	+60.85	+62.95	70 17d
10 20	75.0	78.35 36 72.05 38	$\substack{60.2 \\ 59.8}$	61.8 60.6	78,17%
30	62.5	65.55 38.	7 60.0	60.0 Az	4.4 11.66 12.27 0.7224 - 10.0 13.54 14.36 .7104 -
		84.4 Kg/cm ²			15.6 15.65 16.40 .6978 - 21.1 18.03 18.71 .6844 -
0	+95.4 +9	95.4 8	+87.65	+89.45	1 26.7 20.69 21.37 .6703
2 4		94.05 10 92.55 12	86.2 85.15 84.7	87.85 86.15	37.8 26.68 27.36 .6375 0.0509
6		01.0 13.4	84.7	84.7 Az	48.9 33.89 34.57 .6023 .0676 60.0 42.47 43.08 .5639 .0891
					71.1 52.60 53.01 .5182 .1224
					82.2 64.31 64.96 .4479 .1799 87.8 70.78 70.78 .3039 .3039

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726 HYDROGEN SULFIDE + PENTANE

67.55%	Hydrogen	sulfide (H ₂	S) + Pent	ane (CrH ₁ ,	,)
4.4 - 12.04 0.6644 - 10.0 - 13.81 .6556 - 15.6 - 15.85 .6446 - 21.1 - 18.17 .6334 - 26.7 19.60 20.76 .6212 - 32.2 22.18 23.57 .6077 37.8 25.18 26.61 .5938 0.0504		Sage and L			` '
15.6 - 15.81	mo1%	<u> </u>	P	molar v	olume
26.7 19.60 20.76 6212 -	L	v		L	v
32, 2 22, 18 23, 57 6077 37, 8 25, 18 26, 61 5938 0, 0504 48, 9 32, 04 33, 61 5615 , 0669			4.40		
48.9 32.04 33.61 .5615 .0669 60.0 40.22 41.65 .5225 .0889 71.1 49.95 51.11 .4725 .1222 82.2 61.52 62.20 .3912 .1890 87.8 65.07 65.07 .2851 .2851	100	100 21.58	0.30	112.3 108.5	75660 16420
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56.41%	67.68 56.28	10.50 6.96 4.66 3.15 1.80 0.70	5.4	112.3 108.5 103.3 97.6 91.0 83.4	8115 5310 3870 3050 2370
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15.6 - 15.17 .6125 - 21.1 - 17.42 .5994 - 26.7 17.22 19.80 .5866 -	0.00	0.70	11.5	55.6 41.3	1740
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	10.00	10.00	131.7	112	îîî: 2					

Hydrogen sulfide (H_2S) + Acetylene (C_2H_2)

Baccei, 1899

Absorption

w.1.					
	0%	25vo1%	50vo1%	100%	_
red	7	10	11.5	5.5	
6421	-	12	12	6	
6417	_	-	6.5	3	
6395	_	8	4	2	
5435	-	_	12	6	
5419	-	-	7	3.5	

* minimum pressure (in atm.) where absorption spectrum can be seen.

Hydrogen sulfide (H_2S) + Carbon dioxide (CO_2)

Klemenc and Bankowski, 1932

t		p		
	100%	28.2mo1%	0%	
-120 -116 -110 -105 -100 -95,2	10.5 17.1 35.0 61.1 104.2 170.2	17.5 28.2 56.4 96.1 160 253	7.0 11.1 21.4 35.1 55.3 83.0	

	100%	28.2mo1%	18.2mol%	15.7mo1%	9.25mo
-94.2 -93.2 -91.8 -90 -88 -82 -77	187.5 206.2 235.1 278.6 334.0 569.1 853.1	276 301 339 398 471 764	276 301 339 398 471 697	276 301 339 398 471 667	262 277 302 338 381 534 700

t		p		
	5.62mo1%	3.30mo1%	1.08mo1%	0 . mo1%
-94.2 -93.2 -91.8 -90 -88 -82 -77 -70 -65 -60	256 256 253 262 300 433 571 819	256 256 253 241 240 354 473 685	256 256 253 241 222 270 366 542 699	90.1 97.6 108.5 125.6 145.9 222.9 309.0 467.2 611.7 788.3

Thi al	and Schulte, 192					6.	, 3mo1%	
p		mo1% V		15 20 25 30	1.66 13.63 23.52 32.02	40.7 42.1 43.5 44.9	11.67 22.79 32.00 39.85	1301 974 773 636
750 0%	-82.10 25. b.t. = -62°	4 75.3		35 40 45 50 55	39.58 46.30 52.46 58.14 63.45	44.9 46.3 47.6 49.0 50.5 52.1	46.92 53.17 58.89 64.16 69.04	537 461 400 350 309
				60 65 70 75 80	68.43 73.11 77.52 81.70 85.75 89.83	54.0 56.2 58.7 61.5 65.2 71.2	69.04 73.60 77.81 81.72 85.39 88.83	274 244 217 192 168
	c, 1932 (fig.)			85	89.83		92.03	136
mo1% (•	mo1% (V)	p V L	15	_		.14mol% 7.72	1288
100 90 80	V L -82° 570 770 630 " 705 "	100 90	-90° 280 400 305 " 340 "	15 20 25 30 35 40	3.36 13.04 21.44 28.90 35.65 41.79 47.42	41.2 42.5 43.8 45.0 46.3 47.6	18,62 27,65 35,44 42,12 47,97 53,25	967 767 631 530 454 393
74 70 60 50	770 " 660 " 500 " 400 "	70 60 50 40 30	400 " 300 " 250 " 205 " 180 "	45 50 55 60 65 70		49.1 50.7 52.4 54.4	58.20 62.87 67.21 71.20	343 303 268 238 211
40 30 25 20 10 0	295 " 280 " 265 715 245 550 225 _	20 13 10 5	155 " 135 " 130 360 120 240 115 240	70 75 80 85	52.64 57.59 62.34 66.90 71.30 75.58 79.82	56.9 60.1 64.0 69.4 26.0	74.85 78.12 81.15 83.76 08mo1%	186 163 135
quadr	uple point : 9.79	0% -95 .2 °/25	3.2mm	15 20	.~		$\substack{3.56\\13.94}$	1271 252
				25 30	6.26 14.36	42.2 43.4	22.51 29.96	753 619
Bierle	ein and Kay, 1953			45 50	28.07 34.08 39.62 44.76	45.9 47.3 48.8	47.35 52.13 56.56	447 389 341 300
mo1%	t	P molar	volume(in cc)	ll 65	49.60 54.23	52.3 54.4	60.64 64.35	2 33
0.00 6.30 16.14	93,50 8 84,16 8	8.87 97. 8.79 95.	. 2	85	58.67 62.96 67.18 71.84	59.8 63.6 70.5	66.59 68.52 70.60 75.80	205 180 156 125
47,28 66,59 82,92 90,09		A 7A 93	1 0 .1 .5	40 45	1.10 8.76 15.61 21.81 27.53	42.4 43.5 44.7 46.1 47.6	8.16 16.47 23.57 29.84 35.35 40.33	930 738 606 510 437 378
P		ume t n	nolar volume (in cc)	50 55 60 65	32.84 37.80 42.46 46.89	52.8 55.0	44.88 49.01 52.78 56.25 59.45	331 291 257 277
		0%		75 80	55.25 59.37	61.3 66.5	62.18	175
15 20	13.28 41.9 24.50 43.4	13.28 24,50	1307 978	1	. • • •		28mo1%	*
25 30	33.64 44.9 41.55 46.3	33.64 41.55	674	20 25	-	_	$\frac{3.30}{11.70}$	913 72 6
35 40	48.58 47.7	48.58 54.99	499	35	5.52 12.11	45.0	18.42 24.31	595 501
45	66.28 52.0	60.83 66.28	431 3 7 5	40 45	18.05 23.49	46.4 47.9	29.58 34.40	429 372
60	76 20 55 4	71.39 76.20	330 290	50 55	28.53 33.27	51.6	38.86	287
65 70	80.76 57.5 85.13 59.9	80.76 85.13	256 226	65	37.78 42.11	56.5	46.93 50.45	22 I
80	89.29 67.1 93.29 67.1 97.25 73.9	89.49 93.29 97.25	199 173 142	70 75 80	46.29 50.34 54.37	59.1 63.2 71.6	55.27 57.36	192 164 130
mo1% 0.00 6.30 16.14 26.08 37.59 47.28 66.59 290.09 100.00 P	t critical p 100.38 8 93.50 8 84.16 8 74.48 8 64.74 8 66.98 8 43.72 7 35.96 7 33.53 7 31.10 7 t molar vol (in cc L 13.28 41.9 24.50 43.4 33.64 44.9 41.55 46.3 48.58 47.7 54.99 49.0 60.83 50.4 66.28 52.0 71.39 53.6 76.20 55.4 80.76 57.5	P molar oint 8.87 97. 8.60 94. 7.36 93. 4.74 93. 2.12 93. 6.83 93. 3.85 93. 3.19 93. 2.95 94. Ume t n V	7 4 2 6 6 1 0 1 5 8 8 6 6 00lar volume (in cc) 1307 978 790 674 579 499 431 375 330 290 256 226 199 173	55 65 70 70 780 85 20 25 30 45 45 55 66 70 780 25 30 45 45 45 70 780 780 780 780 780 780 780 780 780	14.36 21.54 28.07 34.08 39.62 44.76 49.60 54.23 58.67 62.96 67.18 71.84	43.4 44.9 47.3 48.9 47.3 52.3 56.9 593.6 70.5 37.5 43.5 44.1 47.6 43.5 57.6 61.5 57.6 61.5 45.0 47.6 49.6 49.6 49.6 49.6 53.9 53.9	29.96 36.42 47.35 52.13 56.56 60.64 64.35 66.59 75.80 75.80 69mol\$ 8.16 16.47 23.57 29.84 35.35 40.33 44.88 49.01 52.78 562.18 64.78 28mol\$ 3.30 11.70 18.42 24.31 29.58 34.40 38.86	619 522 447 389 341 300 265 233 205 180 156 125 930 738 606 510 437 378 331 291 257 277 200 175 151 913 726 595 501 429 372 326 287 253

HYDROGEN SULFIDE + CARBON DIOXIDE

	***************************************	66.	59mo1%			 	40	atm.		50	atm.
25 30 35 40 45 50 55 60 65 70	0.38 6.50 12.10 17.24 22.00 26.44 30.61 34.54 38.21 42.16	44.6 45.9 47.4 49.0 50.8 52.9 55.4 58.6 63.0 73.1		86 91 70 22	680 559 469 399 344 297 258 222 190 162 132	54.99 50 45 40 35 30 25 20 15 10 9	0.0 3.5 7.4 11.7 16.8 23.2 31.3 42.0 56.3 75.6 79.7 85.2	0.0 12.4 21.6 30.0 38.2 46.7 54.6 63.0 72.0 83.5 86.2 89.9	66.28 65 60 55 50 45 40 35 30 25 20	0.0 1.0 4.8 8.9 13.5 19.0 25.5 33.6 43.8 57.2 73.9 87.4 93.2	0.0 4.5 13.2 21.6 29.5 37.4 45.5 53.4 61.4 70.1 81.1
35 40 45 50 55 60 65 70	3.08 8.40 13.29 17.80 22.00 25.95 29.67 33.12	82. 46.8 48.4 50.1 51.9 54.2 57.0 61.2 67.8	10, 14, 19, 23, 27, 30,	.90 .14 .93 .32 .37 .14 .63	445 377 324 279 241 208 176 145	7 5.80 76.20 75 70 65 60 55 50	0.0 0.9 5.0 9.2 13.7	94.2 100.0 atm. 0.0 3.5 12.2 19.4 27.1 34.5 42.3	16 14.85 85.13 80 75 70 65 60 55	93.2 100.0 70 3 0.0 4.2 8.6 13.1 18.4 24.3 31.2	0.0 9.0 16.0 22.6 30.0 36.9
35 40 45 50 55 60 65 70	1.92 7.21 12.04 16.48 20.61 24.43 28.00 31.42	47.2 48.8 50.5 52.5 54.8 57.9 62.5 70.0	7. 12. 17. 21. 25. 28. 31.	,70 ,97 ,75 ,13 ,19 ,00 ,46	438 372 318 274 236 203 171 136	345 440 35 30 25 24 22.52	25.6 33.0 42.5 54.0 68.7 87.3 92.2 100.0 80	49.6 58.3 66.2 75.9 90.1 93.8 100.0 atm.	35 45 40 35 30 29,26	31. 2 39. 8 48. 9 61. 5 76. 5 96. 7 100. 0	44.2 53.2 60.1 68.7 79.6 96.9 100.0
35 40 45 50 55 60 65 70 72,95	0.65 5.80 10.51 14.85 18.82 22.52 26.01 29.26 31.10	1009 47. 8 49. 5 51. 4 53. 6 56. 2 59. 3 63. 5 70. 5 94. 6	0, 5, 10, 14, 18, 22, 26, 29,	.65 .80 .51 .85 .82 .52 .01	440 379 327 282 243 210 182 149 94.6	90 85 80 75 70 65 60 55 52.08	2.5 7.0 11.6 16.7 22.5 29.2 36.6 45.6 54.4	5.0 12.7 17.6 24.0 30.8 37.3 43.8 50.8 54.4			
	mo1%		t		ol%						
	L	v		L	v						
24.50 20 15 10 5 0 -5 -10 -15 -16 -17 -18 -19.08	20 at 0.0 2.0 5.2 9.2 14.2 21.1 33.1 43.1 61.8 66.9 74.8 83.6 100.0	0.0 13.1 24.0 34.1 44.1 53.1 66.5 71.5 84.0 88.9 100.0	41.55 40 35 30 25 20 15 10 5 0 -1 -2 -3.01	0.0 1.0 4.2 7.7 12.2 17.9 25.1 34.9 48.4 68.4	0.0 5.6 16.9 26.1 35.3 44.5 53.1 61.1 69.8 80.8 83.7 80.6 100.0						

730 HYDROGEN SULFIDE	+ METHYL ETHER
Hydrogen sulfide ($\rm H_2S$) + Methyl ether ($\rm C_2H_6O$)	Hydrogen sulfide ($\rm H_2S$) + Phenylhydrazine ($\rm C_6H_8N_2$)
Baume and Perrot, 1914	Nikitin and Pushlenkov, 1954
mol% f.t. mol% f.t.	mol% f.t. mol% f.t.
100	100
Hydrogen sulfide (${ m H_2S}$) + Acetone (${ m C_5H_6O}$)	mol% E mol% E
Lewis, 1925 d n % d n	96.50
94.66 .8050 312.2 69.38 .9130 343.0 88.88 .8570 331.3 57.56 .9705 347.1 77.78 .8761 336.5	$64.90 - 87.5 1.00$ $E_1 : 66.7 \text{ mol} \% 1.4^{\circ}$ $E_2 : 99.8 \text{ mol} \% - 87.5^{\circ}$
Hydrogen sulfide (H ₂ S) + Methyl alcohol(CH ₄ 0)	t p dissoc. t p dissoc.
Baume and Perrot, 1914 mol% f.t. mol% f.t. 100 _95	(1+2) 1.4 2880 -50 83 0.0 2510 -60 32 -10 1347 -70 12 -20 719 -80 4 -30 367 -90 2 -40 179
87.2 105.9 51.8 108.6 82.7 110.6 49.5 104.5 77.7 115.8 46.7 100.2 74.1 116.6 43.6 96.5 71.0 122.2 40.3 92.9 (1+2) 67.3 126.1 33.2 90.3 64.5 128.5 28.3 87.5 61.9 132.0 21.9 86.4 58.0 123.4 14.8 85.3 56.2 -116.1 8.1 -84.5	

Ammonia (NH ₃) + Methane (CH ₁ ,		Traus	z and Heb	erling, 19	231		
				%					
Jung and Schm	ick, 1930			76	20°	100°	200°	250°	
% n	78	<u>n</u>		0	9.82	12.79	16,46		
	14,5°			11.33 19.29	$10.01 \\ 10.13$	$12.94 \\ 13.01$	16.47	$18.09 \\ 18.05$	
100 10.91		10.77		30,39	10.22	13.04	16.48 16.39	17.91	
90 10.99 80 11.05		10.61 10.39		48.28 70.07	10.30 10.27	$13.03 \\ 12.91$	16.22 15.95	17.64 17. 2 9	
70 11.05 60 10.99		10.08 9.79		89.04 100.00	$10.15 \\ 10.08$	12.69 12.57	15.61 15.41	16.89	
50 10.91	v	7.17		100.00	10.00	12.07	10,41	10,00	
				Korní	eld and H	lilferding	1931		
Ammonia (NH ₃) (b.t. = _33.6	6) + Hydroc	arbons.	mo1%		conductiv		06	
Lecat, 1949				100	2 5°	52,7			
Name	Formula	Az		73.6	0	57.6			
	b.	t. %	b.t.	41.2	8	61.2 62.6			
Propane	(C_3H_8) -42	2. 90-95	_44	0.0		63,0			
•	$(C_{4}H_{10}) -0.$		-37.1						
	(C ₄ H ₁₀) -10		-38.4						
Isopentane	$(C_5H_{12}) +27$	6 35	-34.5					_	
Propylene	$(C_3H_6) - 34$	2 85-90	-42	Ammor	ia (NH ₃) + Cyclic	hydroc	arbons.	
Butene-1	$(C_{4}H_{8})$ -6	55	-37.5		. 1011				
	$(C_{\mu}H_{8})$ -6		-38.5	II	is, 1944				
=	(C_3H_4) -23		_ 35	2 nd c	omp.	For	rmula	C.S.T.	
	(C_4H_6) -4.		-38.5	Cvcle	hexane	<i>(</i> C	(H ₁₂)	59	
Trimethylene	(C_3H_6) -31.	,5 80	-44	11	lcyclohex		H ₁₄)	63	
				Benze	•		(H ₆)	below -21	
				Tolue			H ₈)	_5	
				n∟Xy l	ene		H ₁₀)	+15	
Ammonia (NH ₃) + Ethylene (C ₂ H ₄)		1_Me1	hy Inaph th	alene (C		28	
Thomsen, 1911									
_ % _ n	<u> </u>	<u>n</u>		l					
	12.3 ~ 13°								
100 10.16 92.0 10.37		10.50 10.46							
82.5 10.43	18.7	10.28							
72.5 10.47	0	10.05							
				ļ					
				ł					
				ł					
				u .					

Ammoni	a (NH ₃) +	- m_Xylene	e (C _B H _{1 c}	,)	Ammonia (NH_3) + Carbon dioxide (CO_2)				
Kraus	and Z eitfuc	hs. 1922			Matignon and Frejacques, 1921				
mo1%		P			t p dissoc. (2+1) (carbamate)				
	80	10°		14°					
0.0 1.3 3.7	5.62 5.60	6.02 6.00	6.44 6.41 6.33	6.90 6.86 6.79	60 770 31 2417				
5.0 9.0	5.54 5.50 5.50	5.92 5.88 5.86	6,30	6,73 6,70	93 3952				
10.9 13.5 16.6	5.51 5.50 5.51	5.88 5.87 5.89	6.29 6.28 6.28 6.28	6.70 6.70 6.70					
18.2 19.8 21.9	5.53 5.53	5.89	6.28 6.30	6.72	Grüsz and Schmick, 1928				
21.9 26.2 32.6	5.48 5.50 5.49	5.86 5.88 5.86	6.25 6.28	6.66 6.69 6.67	mol% U mol% U				
26.2 32.6 35.4 39.3 45.8 47.9 49.8	5.48 5.47	5.84	6.26	6.61	22° 0 0.922 66.2 1.000				
47.9 49.8	5.43 5.39 5.37	5.74	6,09	6,46	9.8 .943 78.0 0.990 21.0 .966 87.3 0.980 38.0 .986 100.0 0.953				
49.9 54.0 57.6	5.42 5. 2 9 5.18	5.70 5.49	- 5.81	6,30 6,14	38,0 .986 100,0 0,953 48,4 .994				
58.7 62.0	5.12 5.01 4.87	5.42 5.31 5.14	5.71 5.61	6.06 5.92 5.73					
65.0 69.2 75.0	4.64 4.16 3.32	4.89 4.37	5.43 5.15 4.60	5.43 4.83	Ammonia (NH_3) + Methyl ether (C_2H_60)				
82.7 88.2 90.7	3.32 2.46 1.97	3.47 2.57 2.06	3.59 2.67 2.14	3.76 2.79 2.22					
mo1%		P			Baume and Perrot, 1914 mo1% f.t. E mo1% f.t. E				
	15°	17°							
0.0 1.3 3.7	7.11 7.09 6.98	7.60 7.56 7.46	8.19 8.33 8.19		$\begin{array}{cccccccccccccccccccccccccccccccccccc$				
5.0 9.0	6.95 6.92 6.93 6.91	7.41 7.39	$8.18 \\ 8.13$		17.8 -85.5 -91.0 13.0 -80.0 -				
10.9 13.5 16.6	6.93 6.91 6.92	7.39 7.36 7.37	8, 10 8, 10 8, 10		$\begin{bmatrix} 27.3 & -89.5 & - & 19.5 & -85.1 & -92.9 \\ 20.0 & 20.5 & 20.5 & 20.5 \end{bmatrix}$				
18.2 21.9 26.2	6.92 6.94 6.89 6.91	7.39 7.34 7.35	8.12 8.06 8.06		37.8 -91.5 - 29.3 -87.3 -				
32.6 39.3	6.88 6.82	7.31 7.24	$\frac{8.01}{7.91}$		76.2 -98.6 -139.3 34.5 -84.4 -91.0 97.6 -138.7 -139.6 35.5 -88.6 -100 -137.8 - 39.8 -86.7 -91.5				
47.9 54.0 57.6	6.65 6.46 6.31	7.05 6.68	7.68 7.31		45.0 -89.4 - 47.7 -89.2 - 48.1 -90.6 -91.0 51.7 -90.1 -138.1 52.3 -90.3 - 52.2 -89.4				
58.7 62.0	6.24 6.10	6.58 6.40	7.13 6.93		1 56.1 <u>~91.7 ~ 55.4 ~90.3 ~138.4</u> 1				
65.0 69.2 75.0	5.88 5.56 4.94	6.20 5.86 5.19	6.70 6.30 5.56		68.4 -95.6 - 62.3 -92.1 -138.0 77.0 -100.0 -139.7 65.2 -92.6 -137.7				
82.7 88.2 90.7	3.85 2.85 2.27	4.01 2.97 2.36	4.27 3.15 2.49		83.1 -106.5 -139.7 68.7 -94.9 -137.8 90.5 -123.6 -139.5 77.4 -99.2 -137.8 100.0 -137.6 -137.6 80.7 -101.7 -138.7 86.3 -107.5 -137.8				
t	mo1%				86.3 -107.5 -137.8 (1+1) 100.0 -137.3 -				
	L ₁	La		- - i					
8 10 12	6.5 8.0 9.4	43.4 40.0 36.4							
14	12.9	28.2							

D b.t.

.475

.634

.904 1.095

+0.365

```
Ammonia ( NH_3 ) + Guanidine ( CH_5N_3 )
                                                                           Ammonia ( NH_3 ) + Trimethylamine ( C_3H_9N )
  Watt and Mc Bride, 1955
                                                                           Lecat, 1949
composition of phases in equilibrium
                                                                                                %
                                                                                                                 b.t.
  mol 🕉
                                                                                             0
27
100
                    p
                                                                                                       below \begin{array}{r} -33.6 \\ -33.5 \\ + 3.5 \end{array} Az
                   -35.5°
                             C + (1+1) + V
(1+1) + V
(1+1) + sat.sol. + V
                 220
 10_- 50
   50
               220-470
 50 _ 20
               470-630
                                                                             Ammonia ( NH<sub>3</sub> ) + Aniline ( C<sub>6</sub>H<sub>7</sub>N )
 Ammonia ( NH3 ) + Guanidinium chloride (CH6N3C1)
                                                                             Franklin and Kraus, 1898
 Watt and Mc Bride, 1955
                                                                             %
                                                                                          D b.t.
 composition of phases in equilibrium
                                                                                                             9.21
                                                                             1.61
3.07
                                                                                         +0.069
                                                                                                            11.86
                                                                                           .123
.169
                                                                             4.44
4.84
6.39
                                                                                                            15.43
20.95
    mo1%
                          p
                                                                                           .185
.286
                       -35.5°
  100<u>-</u>33
                        70
                                      C_1 + (2+1) + V
(2+1) + V
                       70-140
   33_25
                      140
                                       (2+1) + (3+1) + V
(3+1) + V
                      140-310
                                      (3+1) + (9+2) + V
(9+2) + V
(9+2) + (6+1) + V
(6+1) + V
   25-18
                     310
                      310-450
                                                                             Ammonia ( NH_3 ) + Pyridine ( C_5H_5N )
                     450-680
                                                                             Franklin and Kraus, 1898
                                                                                        D b.t.
                                                                                                                      D b.t.
Ammonia ( NH_3 ) + Dicyandiamide ( C_2H_4N_4 )
                                                                                       +0.050
                                                                                                                     +0.818
                                                                                                         19.75
                                                                             1.29
3.79
                                                                                         .049
                                                                                                                       1.004
                                                                                                                       1.211
1.423
                                                                                          . 164
                                                                                                         28.86
Janecke, 1930
                                                                                                        33.89
39.23
45.97
                                                                             4.10
                                                                                         .ī7i
                                                                             7.72
8.05
                                                                                         .321
.342
.513
                                                                                                                      1.681
2.031
   %
               f.t.
                                              f.t.
                                                                            12.40
15.60
                                                                                                        49.68
                                                                                                                      2,240
                                65.0
67.0
  44.8
                                              +61
74
82
105
                                                                                         .646
              -15 (1+1)
  46.8
               -2
+2
30
                                67.0
  48.7
  56.5
  61.1
                42
  tr:t. = 49^{\circ}
             (1+1)
                            sat.sol.
 -78.5
              0.005
                               0.041
                .058
.271
.980
                                .515
 -2ĩ
```

	Foote and Brenkley, 1921
Ammonia (NH_3) + Ammonium thiocyanate ($CH_{14}N_2S$)	mol≸ p mol∜ p
	0°
Foote and Hunter, 1920 P	41.85
60.58 489 76.70 (sat) 105 10° 0 4656 66.86 448 61.02 765 68.65 377 62.29 688 71.21 295 62.68 648 75.05 202 64.32 572 77.49 (sat.) 167 65.83 496 20°	43.54 167 25.85 770 40.26 201 24.58 872 35.55 294 23.43 980 32.91 376 22.40 1086 31.12 446 21.47 1194 30.14 494 20.68 1309 28.75 570 19.64 1440 27.33 646 18.94 1552 27.00 688 0 4656
0 6480 71.48 473 66.61 756 72.93 415 67.62 682 74.87 340 68.64 620 77.57 259 69.74 560 78.36 (sat.) 237	20° 44.78 236 30.32 774 43.63 258 28.86 876 40.02 339 27.52 989 37.69 413 26.35 1106 35.95 471 25.28 1193 34.04 558 24.45 1301
0 8808 76,82 437 70.94 764 78,43 371 71,82 685 79,16 346 73.39 589 80.01 (sat.) 316 75,16 514	32.90 618 23.61 1417 31.87 680 22.34 1543 30.88 753 0 6480
40° 0 11722 77.97 587	Foote and Hunter, 1920
75.38 748 79.44 503 76.83 658 81.50 (sat.) 411	% f.t. % f.t.
t p t p sat, sol, -78 1 -23 34 -65 4 -20 41	76.87 +2.8 80.14 31.0 77.49 10.0 80.76 33.0 78.36 20.0 81.50 40.0 78.52 23.3 83.33 49.8 80.01 30.0
-50 9 0 107 -34 21 +22 225	
	Foote and Brenkley, 1921
	% f.t.
Foote, 1921	77.12 0 77.30 10 78.65 23
, p % p	(1+1)
71.11 761 64.30 1337 68.78 939 62.62 1523 66.12 1167	

	(1+1)
	46.5 -75.1 34.9 -83.0 45.1 -75.5 32.7 -90.5
Bradley and Alexander, 1912	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
% (1+1) f.t. % (1+1) f.t.	41.1 _77.6 31.5 _86.5
	39.2 -77.6 30.4 -89.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(2+1)
90.11 77 43.37 -76.8 86.78 56 42.57 -75.3	28.9 -91.9 22.5 -97.5 28.4 -91.5 -95.0
86.78 56 42.57 -75.8 83.45 32 42.23 -79.0 82.38 23 41.38 -79.8	28.4 -91.5 -95.0 26.5 -94.0 22.1 -94.8
86.78 56 42.57 -75.8 83.45 32 42.23 -79.0 82.38 23 41.38 -79.8 80.60 10.3 40.78 -79.8	26.5 -94.0 22.1 -94.8 24.6 -92.3 20.8 -96.0 -93.0
1 79 07 _0.3 40.71 _79.8	
78.09 -5.8 39.93 -79.8	NH ₃
77,50 -13,8 39,27 -84,7 76,73 -16 38,47 -86,3	19.8 -94.0 8.1 -83.2 17.8 -91.4 5.7 -80.9
76.06 -20 38.37 -84.3	17.8 -91.4 5.7 -80.9 16.6 -90.6 0.0 -77.5
75.11	16.6 -90.6 0.0 -77.5 13.1 -85.8
73 70 _25,8 38,45 _87,3	
72.33	(CH N O)
70.37	Ammonia (NH_3) + Urea (CH_4N_20)
69.25 -42.8 33.59 -91.3 67.71 -39.8 33.21 -95	
69.25	Janecke, 1930
II 61 24 .38.8 31.75 -90.3 I	mol% P t mol% P t
11 33.92 42 90.99 ~00 1	sat.sol.
54.60	26.4 0.053 -78.5 29.5 0.676 -40
52.67	27.3 .195 _60 31.4 .950 35
1 50.25 _57 21.25 _79 I	28.0 .384 .50 98.8 .915 +132
48.92	
1) 46 04 70 9 13 22 78 I	
45.10	Scholl and Davis, 1934
44.87 -75.7 5.22 -76.8	
44.87	wt% mol% t P
(1+1) (3+1) (6.5+1) (7+1) (8+1)	sat.sol,
	20.8 6.64 -26.4 1.3
	38.8 15.26 +5.8 4.7 51.8 23.39 23.9 7.6
Foote and Hunter, 1920	62.8 32.29 35.9 9.2
	62.8 32.29 35.9 9.2 68.0 37.60 40.9 9.4 73.2 43.59 44.7 9.0 73.2 43.60 44.9 9.1
	73.2 43.60 44.9 9.1
0°	75.9 47.29 50.9 9.4
25.0 1979 40.3 1246 31.1 1640 42.9 1110	1 84.8 61.39 81.0 13.4
25.0 1979 40.3 1246 31.1 1640 42.9 1110 36.7 1395	85.0 61.53 82.0 13.5
50,7 1070	91.1 74.38 101.0 12.5
Ammonia (NH ₃) + Formamide (CH ₃ NO)	Franklin and Kraus, 1898
	% Db.t. % Db.t.
	- De Ve
Sisler, Vander Werf and Stephanou, 1946	0.17 + 0.015 $8.92 + 0.484$
mol% f.t. mol% f.t.	0.84 .054 9.43 .520 1.85 .100 10.75 .587
	1.85 .100 10.75 .587 2.89 .167 11.30 .615 3.00 .177 12.23 .669
CH ₃ NO 100 +2.2 64.5 -36.3	1.85 .100 10.75 .587 2.89 .167 11.30 .615 3.00 .177 12.23 .669 3.44 .189 12.32 .663 5.00 .274 13.00 .714
98.1 +1.0 60.3 -44.0	3.44 .189 12.32 .663 5.00 .274 13.00 .714
94.3 -2.3 56.0 -50.9	5.56 .413 14.99 .760
92.7	7.36 .408 14.75 .782 7.80 .433 15.75 .854
86.0 _10.4	8.23 .452 17.57 .904
84.1 -12.0 49.7 -67.7 77.4 -19.8 48.9 -75.4 metast.	8.91 .486 20.96 .997
84.1 -12.0 49.7 -67.7 77.4 -19.8 48.9 -75.4 metast. 69.7 -29.8 47.9 -72.7 66.5 -33.9 46.6 -74.0	
66.5 _33.9 46.6 _74.0	<u> </u>

Janecke, 1930	t p dissoc. p (3+1) (1+1) sat.sol.
% f.t. % f.t.	
17.9 -30 75.6 +45 31.8 -50 80.7 66 45.1 +14.5 80.7 66 49.2 20.5 81.4 66.5	-25 750 75 -35 290 35 580 -65 25 4 - -78 6 1 -
54.3 26.0 83.6 78.0 58.1 31.5 91.9 108.5 72.3 43.0 (1+1) f.t.= 46°	Ammonia (NH_3) + Amygdaline ($C_{20}H_{27}NO_{11}$)
	Sherry, 1907
(1+1) -78.5 3 -21 248 -60 14.5 -11 480 -40 72	c (α) _D
Fitzgerald, 1912	4.1
M d M d	
-33.5° 2 nd series 2.104 0.7516 1.972 0.7511 1.152 .7210 0.943 .7142 0.584 .6995 0.872 .6995	Ammonia (NH_3) + Asparagine ($C_4H_8N_2O_3$)
0.584 .6995 0.872 .6995 0.300 .6920	
м п м п	Sherry, 1907
_33,5°	c (a)
1 st series 2 nd series 2.075 4115 0.806 3184 0.966 3268 .376 2841 .566 2942 .220 2751 .498 2806 .129 2715 .195 2730 .114 2687 .067 2660	20 - 23° 6.1
Ammonia (NH_3) + Thiourea (CH_4N_2S) Janecke and Hoffmann, 1932	Ammonia ($ m NH_3$) + Methylborate anhydride ($ m C_3H_9O_3B_3$)
% f.t. % f.t.	
% f.t. % f.t. 11.3 -71.8 61.2 +11.8 11.7 -70.2 64.0 28.0 12.7 -68.0 64.9 30.0 18.0 -55.5 66.8 34.2 27.2 -37.1 69.6 40.3 28.6 -33.8 80.5 95.3 30.0 -32.9 81.6 98.7 32.2 -32.8 81.3 100.3 40.7 -19.9 82.3 104.4 44.5 -15.0 83.4 111.4 46.3 -12.8 83.9 111.5 45.4 -14.6 83.9 111.0 46.6 -13.4 86.1 125.2 50.7 -12.0 87.4 127.0 50.0 -10.0 93.9 152.0 53.4 +0.2 95.0 158.0 54.3 +2.0 100.0 181.0 58.2 +6.2 (3+1) (1+1)	Burg, 1940 t p dissoc. t p dissoc. (2+1) (1+1) 0 12.3 0 1 17 36 33 1.4 26 101 50 3.2 55 4.3 73 13.7 82 57.0

Ammoni	a (NH ₃)	+ Methyl alco	oho1 (CH	η	Amm	onia (NH ₃) +	Ethyl al	cohol (C ₂ H ₆ O)	
Hatem,	1946 and	1 1949			Del	épine,	1892				
t	N (NH ₃		N (NH ₃)		%		t	solubili	•	d	
0 10	13,65 10,85	25 30 35	7.30 6.19 5.34 4.60			. 03		coeffici		782	
15 20	9.66 8.42	40	4,60		86	.31 .22 .52	0 10 20	209.5 164.3 106.6	•	787 791	
N(NH ₃)		d			93	.55	30	97	· ·	798 	
	0°	15° 20°	25°	30°	Enc	nk lin s	and Vrai	ıs, 1898			
$\begin{array}{c} 0\\ 1\\ 2 \end{array}$	0.805 .803 .800	0.794 0.7875 .788 .784 .786 .780	.780 .776	0.781 .776 .771	76		b.t.	# #	D b.t	•	
1 2 3 4 5 6 7 8 9	.798 .796 .793	.789 .777 .780 .774	.772 .768 .765	.767 . 763 . 7 59	0.8		+0.019	12.76	+1.07	1	
6 7	.790 .787	.775 .767 .772 .7645	.762 5 .759	.755 -	1.5 2.2	26	.108 .161 .230	13.98 15.74 17.99 21.10	.18 .38 .61	4	
8 9 10	.784 .782 .779	.769 .762 .756 _		-	3.0 4.2 6.0)()	.321 .463	21.10 24.10 27.93	.96 2.31 2.82 3.20	1 7	
11 12 13.6	.775 .772 .770	= =	-	-	8. 9.2 11.0	23	.645 .800 .905	30.95	3.20	2	
13.6 ======	.//0										
Baume a	nd Perrot	, 1914			Mui	tazaev	and Sk	lyarova, 1	1940		
mo1%	f.t.	mo1%	f.t.			1%	<u>d</u>		101%	d	<u></u>
8.6 13.4	-78.8 -80.0	38.8 41.6	-57.7 -58.7		.0.		0,6115 ,6497	20° 168.6 4 205.7 6	7.84 0 2.63	.7329 .7546	470.4 647.5
20.2 25.4 27.3	-79.8 -71.0	44.4 47.9	_56.2 _54.7 _54.3		15 20	115 81 17	.6642 .6771	229.2 7 249.8 8	'6.66 80.92	.7713 .7761	830.9
27.3 28.8 30.6	-71.5 -67.7 -66.2	51.6 56.6 62.3	- 54.9 -60.9		N 31.	64 5 7	.7019 .7171	324.3 9 382.7 10	01.61 00.00	.7862 .7905	1053.4 1250.1
31.0 33.2 35.3	-66.0 -62.8	68.5 75.7 86.9	-72.9 -90.4 -88.4		====	======					
36.0 36.6	-60.8 -59.4 -62.3	95.6 100.0	-99.6 -95.0		Ha 1	tem, 194	46 and 1	1949			
					t		N(NH ₃)	t	N(NI	H ₃)	
					0 10		8.65 6.62	25 30	4.3 3.7	9	
					15 20		5.69 5.02	35	3.3	0	
					N			d	 -		
						00	15°	20°	25°	30°	35°
				ļ	0 1 2	0.805 .800 .795	0.793 .787	3 0.7 90 7 .785 2 .779	0.788 .782 .776	0.785 .779 .773	0.782 .776 .771
					3	.788 .784	.782 .777 .773	3 ,770	.771 .767	.768 -	.767 -
					5 6 7	.780 .777 .775	.769 - -) <u> </u>	-	-	-
					8	.772	-	-	<u>-</u>	~	-

Ammon	ia (NH ₃) + Pro	pyl alcoh	nol (C ₃ H	₈ 0)								
Frank	lin and	Kraus, I	1898				Am	monia (NH ₃) + I	sopropy1	alcoho1	(C ₃ H ₈ ())
%	D b.t.	(NH ₃)	76	D b.t.(NH ₃)		Ca	dv and	Jones, 193	13			
0.49	+0.028	3	12.28	+0.744			mo	 -	f.t.	mo 1%	f.	 t.	
1.80 4.54 4.64	.106		12.28 15.16 18.06 21.54 25.76 27.61 32.15	0.919 1.107 1.346			100	.0	_86.6	35.75	-74	.0	
5.51	.294 .329 .371	•	25.76 27.61	1.649 1.797			99 86	.69 .18	~87.4 vitreous	35.75 31.49 27.81 26.43 23.03	-74 -75 -77	. 8	
7.39 8.93	.436 .527	,	00,08	2.222 2.378			72	. 18 . 89 . 25	-88.1 -85.0	26,43 23,03	-79 -8 2 -85	. 1	
9.42 10.22	.565 .612		35,92	2.572			56 53	.67 .21	~76.3 ~73.9	17.40 12.93	- 85 - 85 - 85	.6	ļ
							51 50	. 34 . 02	-85.0 -81.1 -76.3 -73.9 -72.8 -72.0	19.45 17.40 12.93 11.94 10.84 8.72 7.22 2.13	- 84 - 83	.8 (1·	+1)
							49 45 43	.02 .72 .40	-71.9 -71.9 -71.9 -71.9 -72.2 -72.9 -72.9	8.72 7.22	-83 -82 -79	. 0	
Cady	and Jor	nes, 193	3				40	.84 .38	-72.2 -72.9	1.49 0.00	-78 -77	. 8	
mo1%	f.	.t.	mo1%	f.t.				. 16	_{-72.9}			• •	
100.6 78.2	26 -9	27.1 99.0	34.33 33.05 31.27	-85.1 -86.2			===						==
70.6 69.6 63.3	51 -	91.0 88.0	31,27 29,21 27,58	-87.1 -88.6			Ha	tem, 19	49				
63.6 62.2 57.6	20 -	83.7 82.8 79.3	24.45 24.45 22.71	-89.3 -88.2 -87.0	(1+1))	t		N(NH _a)	t	N(NH ₃)	
55. 53. 50.	35 ~ 79 ~	79.0 78.2 77.1 77.3 78.0	24.45 22.71 21.70 20.68	- 86.7 - 85.7			0		6	25		.98	
49.2	34 - 3 27 - 3	77.1 77.1	16.82 14.88	-83.5 -82.6 -81.1			10 15 20		4.55 4.05 3.48	30 35	2	.52 .25	
48.4 46.4 44.8	12 - 1 18 - 1	77.3 78.0 79.6	10.34 4.46 3.38	-79.1 -78.9					0,40				
43.3 39.	35 -	79.6 80.1 81.4 84.5	2.83 0.75 0.00	-78.1 -77.5 -77.4			N	0.0			1		
36.7	70 -:	84.5	0.00	-77.4				0°	15°	20°	25°		35°
	·						0 1 2	0.798 .793 .789	0.790 .783 .778	0.785 .780 .774	0.782 .777 .771	0.779 .774	0.777 .771 .766
Hate	em, 1949						1 2 3 4 5	. 785	. 774	.770 -770	765	.769 -	.700
t	N	(NH ₃)	t	N(NH ₃)		5 6	.791 .778 .775		-	-	-	-
0 10	7.0 5.3	0 7 30	25 30	3.62 3.25 2.39			 						
15 20	4.4	65 1 5	35	2,39						_ =====			
N			d										
	0°	15°	20°	25°	30°	35°	1						
0	0.820 .813	0.810 .803	0.804 .799	0.803	0.799	0.794							
$\frac{2}{3}$	808 804	.797 .793	.794 .789	.796 .791 .785	.782 .786 .780	.778 .782							
4 5	.799 .797	.788	.784	-	_	-							
6 7	.794 .792	-	-	-	-	-							
						===							
													1
L													

Ammonia ($N\!H_3$) + Butyl alcohol ($C_{1\!\mu}H_{1\,0}0$)

Cady and Jones, 1933

mo1%	f,t.	mo 1%	f.t.	
100.00 98.2 86.05 84.34 82.31 77.30 70.44 67.47 60.62 60.02 56.23 52.38 49.56 47.76 43.57 42.47	-90.4 91.9 81.6 77.4 74.2 72.8 69.4 66.6 61.3 60.1 60.2 60.6 62.0 62.1	32.69 30.68 28.78 25.92 22.60 21.95 19.69 16.88 13.05 10.30 8.24 6.84 4.50 3.84 3.30	-66.7 67.7 68.4 68.9 71.8 71.9 76.0 77.5 77.3 77.3 78.6 78.1 78.1	(1+1)
40.41 37.49	63,1 -63,6	$\substack{3.00 \\ 0.00}$	78.5 -77.4	

Ammonia ($N\!H_{\scriptscriptstyle 3}$) + Isobutyl alcohol ($C_{\scriptscriptstyle 4}H_{\scriptscriptstyle 1\,0}0$)

Cady and Jones, 1933

mo1%	f.t.	mo1%	f.t.	
100.00	-108.0	35.15	-66.4	
87.48	83.4	33.68	67.0	
82.83	78.1	30.63	68.4	
72.08	71.2	28.61	68.9	
69.12	68.1	28.58	69.4	
62.84	65.0	26.37	71.2	
60.43	62.6	23.50	72.9	
56.75	59.6	21.39	73.2	
56.37	60.0	19.58	74.6	
53.93	59.6	18.75	74.9	
51.84	59.3	17.16	76.0	
49.87	59.1	15.80	72.6	
48.88	60.2	13.08	75.2	
48.11	59.5	9.04	76.6	
45.09	61.6	7.80	77.1	
44.95	60.3	6.23	77.3	
42.56	62.9	4.79	77.5	
38.38	64.3	4.15	78.2	
35,94	-65.4	3.72 2.71 0.00	78.3 78.4 -77.4	

Ammonia ($N\!H_3$) + sec. Butyl alcohol ($C_\mu H_{1\,0} 0$)

Cady and Jones, 1933

mo 1%	f.t.	mo1%	f.t.	
100.0 87.0 83.22 78.64 73.09 69.05 67.10 61.06 58.94 54.28 51.81 50.17 47.37 43.57 41.38	-114.7 94.2 90.4 79.9 73.4 66.6 62.8 61.7 60.5 60.2 60.1 60.7 62.0 -61.9	37.83 31.14 23.17 23.37 22.14 19.07 15.09 13.37 11.77 9.39 8.13 6.31 5.27 1.33 0.00	-63.3 66.4 66.9 68.6 70.0 72.1 73.6 74.2 74.4 76.5 77.9 78.5 78.1 -77.4	(1+1)

Ammonia ($N\!H_3$) + tert. Butyl alcohol ($C_4H_{1\,0}0$)

Cady and Jones, 1933

mo1%	f.t.	mol%	f.t.	
100.0 98.70 96.67 91.99 88.47 79.19 70.02 60.55 59.81 58.69 55.60 55.01 51.55 48.53 44.07 43.87 42.63 40.70 39.08 37.96	+25.7 +19.6 +18.8 +11.1 +5.7 -20.1 -37.6 -39.6 -44.8 -44.7 -43.3 -43.9 -44.2 -44.1 -45.5 -46.9	36.78 35.07 31.55 29.07 27.61 25.15 22.12 21.47 18.23 10.69 8.92 7.66 5.91 4.85 3.98 3.55 3.16 0.88 0.51 0.00	-47.4 47.3 49.5 53.0 52.7 54.5 55.5 66.7 66.7 68.9 74.4 76.5 77.9 78.1	(1+1)

Ammonia (NH ₃)	+ Saccharose (C ₁₈ H ₈₂ 0	11)	Ammonia (NH_3) + Glucose ($C_6H_{12}O_6$)
	NA -1 10 00		Sherry, 1907
Amagasa, Ito and			c (α) _D
7 P	_ B p _ B		20 - 23°
-4,95° 0 2667	_0.62° 0 3147 0	+4,86° 3848	3,47 56,1
42.71 2530	42.31 3000 39	.97 3684 .72 3604	6.94 54.7 6.94 55.5
48,62 2474 53,98 2369	51.52 2851 52	. 15 3473	13.9 54.8 27.8 55.3
60.97 2147 66.33 1927	68,62 2 086 66	.22 3210 .63 2720	
+10,46°	+13 .79 °	0.51 24 50	Ammonia (NII) Language
0 4686 43,54 4436	$\begin{array}{ccc} 0 & 5247 \\ 39.73 & 5031 \end{array}$		Ammonia (NH_3) + Lactose ($C_{12}H_{22}O_{11}$)
49.30 4315 50.70 4283 56.64 4056	45.89 4933 52.94 4722 58.89 4425	:	Sherry, 1907
61.27 380S 66.81 3356	63.42 4084		c (α) _D
	65.49 3884 70.34 3296 72.49 3001		20 - 23°
	.3,1/ 3001		6.95 33.2 13.9 33.5
Franklin and Kra	aus, 1898		13.9 27.8 32.5
% D b.t.	% D b.t.		
99,54 +0.007 98.31 .019 95.58 .047 92,50 .080	95.55 +0.039 90.98 .113 86.14 .180 80.60 .271	[Ammonia (NH ₃) + Phenol (C ₆ H ₆ O)
88.70 .126 87.30 .148	76.89 .330		Franklin and Kraus, 1898
81.68 .237 78.43 .301	72,09 70.06 .527		% Db.t. % Db.t.
72.09 .448 62.63 .761	82.85 +0.228 81.17 .263		0.74 +0.028 13.59 +0.512
59.88 .885	78.95 303 76.72 357	Ï	2.33 .086 13.92 .509 5.93 .200 14.78 .547
56.88 1.042	74.47 .425		8.99 .334 17.79 .715 9.21 .373 21.98 .820
	71.42 .502 68.27 .600		# 10.05 .363 23.72 914
	66,16 .676		12,55 .480
Fitzgerald, 1912	2		
c* d	· c d		Ammonia (NH_3) + Resorcinol ($C_6H_6O_2$)
_3:	3.5°	· · · · · · · · · · · · · · · · · · ·	
1.720 1.0530 0.8230 0.8628	0.1650 0.7170 .0791 .6974		Franklin and Kraus, 1898
.4474 .7803 .3018 .7506	.0430 .6903 .0000 .6825		% D b.t. % D b.t.
			1.01 +0.032 9.30 +0.327
C* n	c n		1.01 +0.032 9.30 +0.327 2.73 .085 10.21 .370 3.03 .103 13.65 .497
<i>il</i>	73.5° 0.0698 29 0		5.72 .194 14.54 .541 6.07 .212 16.89 .645
0.9208 2234 .3909 608 .2202 360 .1240 311	0.0698 290 .0393 278 .0221 272		10,07 ,070
* moles sacchard	ose in 1 liter ammonia		

Ammonia ($ m NH_3$) + Pyrocatechol ($ m C_6H_6O_2$)	Ammonia (NH_3) + Formic acid (CH_2O_2)
Franklin and Kraus, 1898	Groschuff, 1903
% D b.t. % D b.t.	%(1+1) f.t. %(1+1) f.t.
0.74 +0.012 9.66 +0.314	(1+2) (1+1)
0.74 +0.012 9.66 +0.314 1.85 .045 10.16 .328 4.28 .132 10.29 .344 5.25 .168 15.21 .524 6.23 .198 19.27 .690 6.81 .210 21.35 .768 9.39 .280	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Kendall and Adler, 1921
	mol% f.t. mol% f.t.
Ammonia (NH_3) + Hydroquinone ($C_6H_6O_2$)	50.00 117.3 78.18 -8.7
Franklin and Kraus, 1898	52.19 111.7 78.96 -13.7 53.07 108.5 79.73 -23.5
% Db.t. % Db.t. % Db.t.	54.82 103.7 81.89 -26.0 56.74 98.5 81.08 -32.5
7 17 10 001 0 77 10 010	50 44 89.5 83.03 -31.3
1.60 .056 7.98 .328 1.84 .061 3.43 122 8.97 .366 5.55 .189	62.50 74.3 84.07 -33.8 65.84 53.1 85.39 -26.9 67.63 37.5 87.92 -19.8
4.51 162 11.89 .492 6.39 .220 6.09 224 12.60 .558 7.12 .262	68.46 29.3 88.95 -12.6 69.27 20.4 90.79 -6.9
$ \begin{bmatrix} 8.12 & .307 & 14.52 & .630 & 8.19 & .311 \\ 10.41 & .403 & 16.38 & .720 & 9.37 & .352 \end{bmatrix} $	69.97 25.8 92.42 -2.8 70.47 24.9 94.10 +0.6
10.41 .405 10.33 .239 10.65 .398 13.43 .543 10.87 .420 12.23 .446 17.26 .719	70,47 24.9 94.10 +0.6 71,78 22.2 96.60 4.5 73,38 17.3 98.50 7.0 75.05 10.4 100.00 8.47 76,85 +0.7
	(1+4) (1+2) (1+1)
Ammonia (NH ₃) + o-Nitrophenol (C ₆ H ₅ NO ₃)	Ammonia ($N\!H_3$) + Acetic acid ($C_2H_4\Theta_2$)
Franklin and Kraus, 1898	Franklin and Kraus, 1898
% D b.t.	% Db.t. % Db.t.
0.75 +0.027 3.00 .076	0.21 +0.013 8.60 +0.297
6.05 9.77 17.24 .499	1.95 .073 10.55 .346 5.48 .187 11.11 .334 6.13 .223 12.02 .395 6.76 .239 13.34 .424

			Hydrazine (N_2H_4) + Diphenylamine ($C_{1,2}H_{1,1}N$)
Davidson, Sisler and Stoe	enner, 1944		
mol% f.t, mol	f.t.		Semishin, 1949
(1+2)		1	mol% f.t. sat.t. mol% f.t.
76.3 50.1 68.3 73.7 59.5 67.2 69.8 66.0	66.5 6 7. 0		
(1+1) 66.0 69.0 54.4 65.1 73.5 53.6 64.1 79.5 52.6 60.4 96.5 50.6 59.2 100.5 49.6 56.7 106.5 48.4	115.5 117.0 117.0		15.20 - 82.0 66.61 47.0 21.02 - 104.5 70.97 48.0 26.40 -37.14 122.5(above) 77.10 49.1 82.21 50.1 86.04 51.2 90.51 52.0 92.90 52.3
46.9 119.0 32.3	2 104.5	ļ	100.00 54.0
45.5 120.0 30.4 44.8 119.5 28.4 44.3 119.5 28.4 44.0 119.5 27.4 41.0 118.0 27.3 33.6 116.4 26.8	3 91.0 1 87.0 3 85.0 3 81.0		Hydrazine (N_2H_4) + Urea ($CH_4N_2\theta$)
33.6 116.4 26.8 (2+1)	78. 0		Semishin, 1939
25.6 6.5 19.5	3 -7,0	ĺ	mol% f.t. E mol% f.t. E
24.3 4.5 18.7 23.3 3.0 15.4 22.0 -1.0 12.3 (9+1)	4 -20,5 7 -29,5		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
11.2 -35.5 2.2 10.4 -34.0 2.6 9.1 -34.5 1.6 7.4 -40.5	61.5 64.0 77.5		13.55
NH ₃ 0.7 -78.5 0.6	-77.5		31.45 -29.4 -39.1 78.27 104.8 - 34.29 -24.0 -39.2 94.92 126.1 - 39.73 +11.4 -39.1 100.00 +132.7 -
			Hydrazine (N_2H_4) + Acetamide (C_2H_50N)
Davidson and Mc Allister	, 1930		Semishin, 1943
mol% f.t. mol%	f.t. mo1%	f.t.	mol% f.t. E mol% f.t. E
100 16.50 81.20 98.27 15.65 78.70 95.57 14.20 76.27 94.48 13.40 74.94 91.45 10.45 74.10 90.31 9.00 71.02 89.27 6.90 69.46 88.13 4.51 68.95 87.30 2.80 68.57 85.59 -2.5 67.73 85.41 -3.0 84.36 -6.5 83.72 2.5 82.86 9.6	24.0 67.54 40.1 66.67 50.1 66.50 54.2 65.90 56.4 65.07 63.0 64.59 64.59 64.27 65.5 62.99 65.9 61.49 66.0 59.00 56.55 52.84 50.00	66.2 66.5 66.2 66.0 65.2 68.5 70.8 75.7 83.6 93.3 102 108 113	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	(1+2) (1+1)		

Hydrazine ($N_2H_{i_k}$) + Methyl alcohol ($CH_{i_k}0$)	Hydrazine (N_2H_4) + Phenol ($C_6H_6\theta$)
Corcoran, Kruse and Skolnik, 1953	Semishin, 1939
	mol% f.t. E mol% f.t. E
mo1% f.t. E mo1% f.t. E 0.0 +1.52 - 39.9 -24.3 -60.0 5.1 -1.2 - 42.3 -26.9 -7 10.0 -3.5 - 45.1 -31.2 -59.7 15.1 -6.3 -62.3 45.4 * -47.3 - 20.1 -8.1 -61.8 50.5 -38.2 - 25.1 -12.3 -61.8 52.9 -42.8 -60.1 31.5 -16.4 -61.8 53.8 -45.1 - 37.2 -21.2 -60.3 55.0 -47.0 - 37.5m (-47.3) * -60.8 55.9 -49.6 -60.7 * incongruent f.t. of (1+1) mo1% f.t. mo1% f.t. 57.0 -52.7 67.1 -57.9 57.1 -47.9 68.1 -58.0 57.6 -53.3 69.6 -58.4 58.0 -55.3 71.4 -60.4 59.0 -58.3 74.5 -61.5 59.1 -48.9 75.2 -64.1 59.5 -50.0 75.7 -63.0 60.0 -49.0 77.0 -66.8 60.0 -49.0 77.0 -66.8 60.0 -64.8 60.0 -64.8	mol% f.t. E mol% f.t. E 0.00 +1.7 - 60.54 60.1 - 11.02 -8.8 - 64.89 62.8 - 13.65 -11.1 - 68.22 63.2 - 16.12 -14.3 -24.7 71.83 62.4 - 19.78 -19.5 -24.3 74.53 60.8 22.86 -19.3 -24.8 76.40 58.4 24.4 25.91 -11.2 -24.6 78.94 54.0 24.3 30.00 +0.4 -24.6 81.15 50.0 24.3 37.58 +11.3 -24.8 82.98 45.6 24.4 43.57 30.2 -24.7 87.48 30.0 24.4 43.57 30.2 -24.7 87.48 30.0 24.4 43.57 30.2 -24.7 87.48 30.0 24.4 44.14 40.0 -24.3 91.93 30.3 24.3 51.07 46.6 - 96.21 35.7 24.4 54.63 52.6 - 100 40.8 - 57.58 57.6 - (1+2) f.t. = 63.5°
60.3 -49.7 78.0 -66.3 60.5 -49.0 78.9 -68.5 61.0 -49.6 79.8 -69.4 (1+4) 62.0 -50.5 83.9 -69.9 62.2 -51.0 87.9 -72.9 62.6 -50.9 90.2 -76.0 62.9 -50.9 92.5 -79.8 63.0 -51.6 92.5 -100 E 63.2 -58.5 93.5 -82.1 63.9 -51.9 94.9 -85.4 64.0 -53.3 97.7 -95.9 64.9 -58.1 98.6 -99.0 66.2 -57.8(1+2)100.0 -98.0	Semishin, 1943 mol% f.t. E mol% f.t. 0.00 +1.7 - 68.10 +5.5 4.51 -1.5 - 70.38 12.1 7.46 4.0 - 74.82 21.4 11.66 5.7 -29.2 78.40 30.0 15.43 8.0 - 84.46 38.7 20.01 11.6 -29.8 87.14 41.5 26.16 18.7 - 91.73 45.8 31.47 -25.6 - 100.00 50.7
Corcoran, Kruse and Skolnik, 1953	Hydrazine (N_2H_4) + Acetic acid ($C_2H_4O_2$)
mol% f.t. E mol% f.t. E	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Semishin, 1943
$\begin{bmatrix} 6.3 & -1.2 & 58.9 & 32.7 & -1.6 & -34.2 & 62.3 & 31.8 & -1.6 & -34.2 & 62.3 & 31.8 & -1.6$	mol% f.t. E mol% f.t.
16.9 4.4 - 64.9 31.5 - 20.3 5.9 - 33.9 67.6 31.8 - 23.5 6.7 - 33.9 70.5 32.1 - 27.6 8.5 - 33.8 73.4 32.8 - 31.5 10.2 - 33.9 76.0 33.2 - 33.4 9 12.3 - 33.5 79.6 36.4 - 116.7 37.9 15.5 - 33.9 79.9 36.7 - 40.5 15.5 - 33.7 82.1 37.7 - 45.0 20.3 - 33.7 85.9 42.4 - 46.8 23.1 - 33.5 88.5 46.0 - 48.4 25.4 - 33.4 91.7 51.0 - 51.0 29.3 - 33.5 94.8 62.6 - 117.4 51.0 29.3 - 33.5 94.8 62.6 - 117.4 51.0 29.3 - 33.5 94.8 62.6 - 117.4 51.0 100.0 - 114.0 - (1+2) f.t. = -31.2°	0.00 +1.7 - 43.77 +83.5 4.33 -3.0 - 47.50 87.1 6.89 -5.2 - 50.44 87.5 (1+1) 8.63 -7.0 -23.3 53.76 82.8 10.63 -11.0 -23.0 57.58 74.0 13.14 -16.5 -23.4 63.42 61.1 15.00 -9.7 -23.2 66.68 47.0 17.30 +5.0 -23.3 70.18 33.2 19.22 13.0 -23.1 70.60 29.4 22.80 28.1 - 73.95 +17.1 26.50 42.5 - 80.16 - 31.48 61.5 -23.2 82.73 -8.5 35.60 72.7 - 88.50 -4.2 39.48 +79.0 - 93.02 +10.2

Semish	in, 1944					
mo1%		d				Hydrazine (N_2H_4) + Valeric acid ($C_5H_{10}O_2$)
	0°	2 5°	50°	7 5°		Semishin, 1943
0.00 6.05 10.09	1.0231 .0546 .0745	1.0024 .0338 .0587	0.9801 1.0147 .0386	-		mo1% f.t. E mo1% f.t. E
19.56 30.30 41.10 48.45 50.00 57.85 68.73 75.00 80.42 84.12 86.90 93.02 100.00	1.1972 .1936 .1876 .1876 .1876 .1826 .1211 cryst.	. 1046 . 1401 . 1621 . 1644 . 1648 . 1644 . 1688 . 1747 . 1707 . 1647 . 1551 . 0968	.0863 .1259 .1471 .1478 .1439 .1462 .1491 .1506 .1464 .1409 .1311 .0728	1.0982 .1252 .1270 .1244 .1266 .1299		0.00 +1.7 - 56.01 42.0 - 59.10 35.1 12.0 13.28 -7.3 -17.2 63.69 23.8 12.0 16.57 -10.8 -17.1 66.40 16.2 11.6 18.98 -14.9 -17.0 68.20 11.9 21.00 -17.1 -17.2 72.71 8.2 - 74.20 4.7 - 26.48 +8.5 -17.1 80.30 -28.1 -26.48 +8.5 -17.1 80.30 -28.1 -30.55 21.3 -17.0 82.00 -45.9 -36.20 34.9 -17.1 86.00 -41.2 -39.42 39.8 - 90.82 -36.5 -34.44 48 46.2 - 94.50 -35.1 -35.1 51.48 49.4 - 100.00 -33.4 - 28.4 - 24.50 -33.1 -30.55 1.4 -30.55 -33.1 -30.
mol%			η			(1+1) (1+2)
		25°	50°	7 5°		
0.00 6.05 10.09 19.56	1365 2793 4940 19740	903.1 15 3 8 2400 7426	973.6 1403 3409	- - -		Hydrazine (N_2H_4) + Benzoic acid ($C_7H_6O_2$) Semishin, 1943
30.30 41.10	60290 cryst.	25910 5 249 0	961 2 15140	4481 6108		mol% f.t, mol% f.t. E
48.45 50.00 57.85 68.73 75.00 80.42 84.12 86.90 93.02 100.00	116630 184480 157470 139310 117980 cryst.	95820 105480 72370 42060 31220 25160 19030 13480 6341 1164	24030 26360 19460 12270 9441 7824 6577 5221 2981 778	9300 10100 7663 5301		0.00 +1.7 46.12 108.9 - 3.98 -3.2 49.50 114.6(1+1) - 8.64 -8.9 52.18 111.6 85.4 12.05 -15.6 54.10 108.0 85.3 16.40 -25.2 56.00 102.0 85.0 21.02 vitreous 57.90 92.1 85.4 24.22 -0.1 59.50 86.0 85.4 26.30 +26.1 61.10 91.2 85.0 27.99 36.9 63.92 94.5 30.58 55.6 66.25 95.5(1+2) -
Hydrazi	ne (NջH _Կ) + Buty	ric acid (C4H802)	30.58 55.6 66.25 95.5(1+2) - 33.96 74.3 69.00 94.0 83.2 36.28 84.3 71.35 91.0 83.2 38.29 90.5 74.30 87.3 83.2 40.91 97.2 78.00 97.3 83.4 40.91 97.2 78.00 97.3 83.4 43.37 102.9 83.40 108.9 - 44.20 104.5 100.00 121.7 -
Semishi	n, 1943					E ₂ : 59,3mol% 85.4° E ₃ : 75,7mol% 83.2°
mol%	f.t.	E	mo1%	f.t.	E	W. Austina (W. W. A. Colinalia coid (C. H.O. A.
0.0 3.98 7.50 12.20	+1.7 -3.8 -8.2 -14.9	-23.8 -23.2 -23.5	46.56 49.72 52.59 55.30	† 50.2 50.2 45.4 38.2	-	Hydrazine (N_2H_4) + Salicylic acid ($C_7H_6O_3$) Semishin, 1943
19.83 23.49 27.35 29.48	-14.1 -1.0 +14.5 19.8	_23,4 _23,4	60.00 62.80 66.00 70.40	$\begin{array}{c} 20.0 \\ + 5.2 \\ -11.3 \\ -33.0 \end{array}$		mo1% f.t. mo1% f.t. tr.t. 0.0 +1.7 44.80 87.1 - 0.81 -0.9 49.42 97.6
32.20 34.90 41.30	28.2 + 36.2 + 45.8 (1+1)	- - -	80.30 89.96 100.00	-20.0 -13.0 -7.9	- 33	2.38
						38.32 68.1 86.29 154.0 41.52 78.2 100.00 159.2 (1+1) 110.8°

Hydrazine (N_2H_4) + Lauric acid ($C_{12}H_{24}\theta_2$) Semishin, 1943	Iodine chloride (CII) + Carbon tetrachloride (${\sf CC1}_{ m h}$
mol % f.t. mol % f.t.	Cornog and Olson, 1940
0.00 +1.7 88.82 42 4.8-83.0 decomposes 100.00 44 E: 37.7°	mol% f.t. m.t. mol% f.t. 0.0 27.3 - 43.2 20.5 0.85 - 23.1 54.0 20.0 2.0 26.0 - 64.6 19.0 3.9 25.0 - 73.2 17.0
Hydrazine (N_2H_4) + Palmitic acid ($C_{16}H_{32}O_2$) Semishin, 1943	4.1 - 18.8 78.4 15.0 9.4 23.0 - 85.2 10.0 15.1 22.0 - 90.7 0.1 15.3 - 10.2 93.2 -8.0 24.3 21.0 - 95.3 -15.7 29.3 - 0.1 98.2 -26.4 E
mol % f.t. mol % f.t.	38.5 - 8.0 100.0 -22.7
0.00 +1.7 88.64 60.3 6.6-83.8 decomposes 100.00 62.6 E: 54.8°	sat.t. mo1 $\%$ L ₁ L ₂
	0 76.2 15.3 10 65.6 29.5
Diborane (B ₂ H ₆) + Tetrahydrofuran (C _h H ₈ O) Rice, Livasy and Schaeffer, 1955 mol% f.t. mol% f.t. 100 -107.8 78 -76.7 95 -112.5 75 -63.6 94 -114.0 73 -54.7 91 -114.7 71 -48.2 90 -113.6 69 -40.1 85 -110.2 66 -56.2 80 -79.8 0 -168.0 E: 91 mol % -117° (1+2) -34° Tetramethylsilane (C _h H ₁₂ Si) + Methyliodide (CH ₃ I)	Todine chloride (C1I) + Pyridine (C5H5N)
Lecat, 1949	30.66 27.08 100.00 -41.50 - 33.34 35.10 (2+1) (1+1)
% b.t. 0 26.64 71.2 26.10 Az	mo1 % d 35° 50°
71.2 26.10 Az 100.0 42.60	0 3.193 3.166 4.01 3.178 3.129 8.07 3.045 3.009 18.415 2.778 2.746 24.235 2.6246 2.595 26.02 2.545 2.5260 30.31 2.439 2.429 33.78 2.414 2.401 35.14 2.397 2.370 36.34 2.365 2.353

mol% и mol% и	mo1%	d	mol%	d
35° 50° 35° 50°		50°		
0 48.2 58.4 16.22 123.4 175.6 0.92 107.3 133.9 21.74 70.2 112.6 2.01 171.4 218.9 27.66 46.4 71.1 4.42 205.1 265.8 28.78 42.6 63.7 6.31 213.9 268.5 30.85 41.1 63.9 8.12 202.0 269.7 32.81 35.1 54.3 9.86 191.1 253.4 34.81 33.7 54.5 11.54 179.1 237.3	0,00 4,93 6,29 9,30 12,86 17,28 18,88 20,33 21,88	3.166 2.966 2.923 2.840 2.780 2.581 2.520 2.512 2.416	26.52 28.70 34.71 42.43 44.26 50.35 54.37 57.72	2.333 2.227 2.092 1.953 1.920 1.854 1.785 1.747
	mo1%		mo 1%	η
Iodine chloride (CII) + Acetamide (C_2H_5ON)	0 2,75 6,95 11,47 15,69 19,34 23,15	50° 2255 2412 2749 2287 4017 4662	41.52 47.84 51.05 53.61	9471 12585 13812 19494 24819
mol% η 45° 35° 25°	23.15 31.46	5447 7920	55.91 60.90 S	31730 33583
0.00 2550 3058 3729 7.46 4509 4909 5492	mo 1%	и 35° 5 0 °	mo1%	и 35° 50°
7.46 4509 4909 5492 13.38 5234 5591 6358 20.71 6848 7712 8968 27.65 10153 12062 14869 37.20 10888 12887 20133 44.48 11845 16854 32068 50.06 13180 22046 39404 59.00 15546 28283 52901 61.70 16322 -	0.00 4.83 9.17 11.88 14.08 21.17	48.2 50.80 214.7 283.0 217.0 296.4 208.0 274.5 174.2 252.8 130.8 177.1	33,49	56.7 95.8 36.2 77.7 14.7 31.6 - 24.3 9.2 19.7 - 17.9
66.45 17475 29935 60264 70.02 13797 25897 - 74.11 12546 21737 41507 77.54 12053 19861 -	Iodine	chloride (ClI) + Diethyl (C ₁ ,H ₁₅ C	1
	Fialkov	v and Muzika, 19	951	
Iodine chloride (ClI) + Benzamide (C_7H_7ON)	mol %	d 35° 50°	mol %	d 35° 50°
Fialkov and Muzika, 1949	100.00 63.55 53.88	1.071 1.023 .405 .358 .600 .521	35.25 0.00	1.985 1.900 3.192 3.166
mol% f.t. E 0 27,15 ~	mol %	η 35° 50°	mol %	η 35° 50°
2.69 21.00 - 1.10 9.30 - 9.48 7.10 -23.0 14.2322.50 21.5524.90 31.74 16.50 -23.80 38.92 27.90 - 46.25 35.65 -	100.00 69.52 63.65 57.71 52.23	3052 2015 15687 7889 25991 10004 36124 14882 53096 17849	48.22 35.71 24.25 16.36 0.00	53452 18162 39214 11112 15159 5871 9767 4379 5808 2870
50.00 36.90 (1+1) - 53.20 27.85 +23.10	mol %	я 35° 50°	mol %	и 35° 50°
53.49 26.55	95.75 94.52 91.93 89.53 87.01 83.19 77.21	198.0 270.3 - 300.0 229.7 310.0 194.0 279.4 174.2 237.1 145.7 196.1 63.0 132.8	71.32 63.95 53.62 51.98 47.61 33.05 18.47	34.43 54.39 19.59 33.89 9.13 17.13 4.57 10.57 4.80 8.96 4.00 8.15 3.92 7.52

			IODIN	E CHLORID	E + ACETI	C ACID			747
Iodine c	hloride (CII) + Acetic	acid (C	2 ₂ H ₄ O ₂)	Boron fl	uoride (BF	S ₃) + Penta	ane (C ₅ H ₁₂)	
Cornog a	nd Olson,	1940			Cade, Du	ınn and Hepp	, 1946		
mol%	f.t.	mo 1%	f,t.		P	mo l	Z.		
1110170	1.0.	nio 1 /c	1, .,		i .	V	L L		
0.0	27.3	34.3	10.0						
4.9 7.3	26.0 25.0	42.1 53.2	0.1]	49°			
12.8	23.0	60.0	-18.2 -35.5 H	Ē	4.0 6.7	38.1 24.1	99.45 98.73		
17.8 19.6	$\substack{20.0\\19.0}$	68.4	$-18.2 \\ 0.1$		9.2	19.5	98.12		
24.0	17.0	68.4 82.2 91.3	+10.2		11.9 14.7	16.1 15.5	97.11 96.36		
26.7	15.0	100.0	16.4		14.7	660	70.99		
					3.8	62.1	99.76		
					6.5 9.2	3 2. 9	99.14		
					9.2 11.9	23.8	98.47 97.84		
odine t	richloride	(ICl ₃) + Ace	tic acid	$(C_2H_{\downarrow}O_2)$	14.8	22.2 17.3	96.88		
					<u> </u>	93°			
1	0.25				6.5	77. 3	99.73		
Bruns, 1	925				8.9 9.1	57.1 50.4	99.14 98.94		
%	ж	%	и		12.2	-	98.09		
		18°			12.4	44.4	98.00		
9.9775	0.0049	1 94.380	0,20663						
9.9752	.0059	2 94.114	.27960						
9.9442 9.9256	.0073 .0082	i 02 733	.33810 .49660						
99.8820	.0091	7 90.65 0	. 1869		Boron f	luoride (BI	F_3) + Methy	yl chloride (CH ₃ Cl)
99.8653 99.8104	.0101 .0145	5 90,305 5 89 50	.7407 .8472						
9.7600	.0137	3 83,59	1,387 1,933		H				
9.5858 9.53 82	.0181		1,933 3,404		Booth a	nd Martin,	1942		
9.4023 9.2750	.0257 .0252	9 74.49 7 70.48	0.66 7 4		mo1%	f.t.	mo 1%	f.t.	
.083	.0699	8 70.16	7.293 1.523		100.0	-96.7	50,2	-122.6	
8.592 7.693	.0422 .0694	9 67,28 0 66,74	1.523 9.568		96.4	-98.2	48.9	-122.6	
96,550	. 1026	0 49.90	6.709		93,3	-99.3	47.4 47.4	-124.3 -126.0	
96.3 7 9 96.143	. 1059 . 1479	4 46,69 0	8.057		90.6 88.3	-100.2 -101.1	45.9	~125.8	
	. 1479	U			88.3 87.2	-101.3	43,8	-129.4	
					84.0 80.6	-102.7 -104.0	$\frac{43.1}{40.7}$	-130.4 -133.6	
t	н	t ×	t	н	77.5	-105.4	38.4 38.2	-136.0	
6.	45%	7.27%		10.50%	77.5 74.7 72.1	-107.0 -108.3	38.2 37.0	-136,3 -140,5	
16		16 0.4844	. 5	0.7529	11 69.8	-109.6	37.0 36.2	- 144.4	
20	. 3381	18 .4966	7	7721	69.2	-109.9 -110.6	$\frac{34.9}{33.4}$	- 144.1 - 144.1	
22 24	.3459 .3491	20 .5122 22 .5196		. 7955	68.2 67.7 67.3	-111.0	31.2	- 143.1	
26	. 3634	24 5238	16	. 8231 . 8430	67.3	-111.5	29.8 27.5	-142.4 -141.0	
28 30	3837	26 5230	20	. 8557	66.9 66.5	-111.6 -111.7	24.9	-138.9	
32	.4234	28 .5305 30 .5280		.8720 .8305	66.1	_111.8	22.4	_137.2	
34 36	.4510 .4706	32 .5389 34 .5548	3 2	.7721	65.8 65.2	-112.2 -112.5	19.3	-135.6 -134.0 -133.3	
38	.4966	36 .573 2	36 40	.7721 .8091	65.2 64.6	-112.2 -112.5 -112.8 -113.3	19.3 16.7 15.5 14.2	- 133. 3	
40 44	.5233 .5 7 53		44	.8557 .9107	64.0 60.8	-113.3 -115.6	$\frac{14.2}{12.7}$	-132.2 -132.4	
48	.6311		48	.9107	58.8	-116.8	11.5	- 131.4	
52 56	.6948 .7557				56.9 55.1	-117.8 -120.2	12.7 11.5 9.5 7.5	-130.7 -130.0	
60	.8151				53.6	-120.4	5.2	-129.2	
					52.4 51.7	-121.5 -121.3	$\substack{\textbf{2.7}\\\textbf{0.0}}$	-128.1 -126.8	
					51.4	-121.3 -121.6	J. U		
					E: 34.5		4.8°		

						Boron trifluori	de (BF ₀) +	Phosgen	e (COC	'la)
						D01041 1111111111	de (big)	rnosgen	c (coc	.127
Boron	trifluor	ide (BF ₃	j + Dichlo	rdifluo ((rmethane CF ₂ Cl ₂)	Martin and Faus	st, 1949			
Booth	and Walk	ւար, 1944				mol% f.t.	Е	mo1%	ſ	.t. E
						0 -127.6		60.3		
Non m	iscible	•				5.5 -130.0 10.6 -130.5	~	60.7 64.7		L38.0 _ L38.0 _
						19.3 _133.0 25.7 _135.5	5 -	66.2 69.3	_	137.0 - 138.0 -
_		! 1. / DE .				30.9 _136.3 34.6 _	-142.3			13 7. 5 143.
Boron		ide (BF ₃) + Monochlor		thane (CF ₃ C1)	40.1 -142.0 45.2 -135.0	_ 142.3			142.0 _ 138.0 _
						49.7 50.5 -134.3	-142.3 -142.3	95.7		136.3 - 134.0 -
Booth	and Walk	up, 1944				55.2135.0 59.1136.3) _	100.0	- :	132.5
mo	1 %	f.t.	mol %		f.t.	(1+1) -13		1+2)	-13	37.0
100	0,00	-181.6	44.62		130.4	E ₁ : 39.6 mol E ₂ : 61.6 mol				
96	.19 .64	-140.3 -136.0	40.39 35,01		130.6 130.6	E ₃ : 77.8 mol				
88	3.35 1.32	-134.5 -132.1	30.11 25.33	-	130.6 130.5					
79	1.32 1.31 1.74	-130.5	20.25	-	130.6 130.5					
69	7.70	-130.6 -130.6	16.69 13.67	-	130.5	Boron fluoride (BF ₃) (b.t. = -101) + F				
59	5.17 9.99	-130.6 -130.5	$\frac{9.80}{7.11}$	-	129.5 128.8					
	1.41 2.68	-130.5 -130.6	$\frac{3.48}{0.00}$		128.1 127.6	Lecat, 1949				
		(second	series)			Name	Formula			١z
100	0.00 1.37	-181.6 -137.8	52.28 47.04		130.5 130.5			b.t.	- %	b.t.
88	3.07 3.95	-134.1 -133.1	34.20 27.39	-	130.5 130.5	Methylether	(C2H60)	-21	40	+127
í 80	.32	-131.1	22.40	-	130.4 130.4	Methylethyl.	(C_3H_8O)	+10.8	47	+127
71	.19	-130.5 -130.5	17.18 13.87	-	130.4	ether	(C _h H ₁₀ 0)	. 134 5	52	+125
62	3.10 2.03	-130.5 -130.5	$\frac{6.90}{0.00}$		128.6 127.6	Ethylether Methylamylether			60	55
58	3.45	-130.5				7.00-5 - 4.1.5 - 5.1.5	1 -0-14-7	(760mm)		(10mm)
						Isopropylether	(C ₆ H ₁ , 0)	+69 (760mm)	61	60 (98mm)
Boro	n trifluo	oride (BF ₃)	+ Tetrafl	uormeth.	ane					
			(CF ₄)							
Boot	h and Wal	lkup, 1944				Boron trifluori	de (BF ₃) (b.t.≈ -	101)	+ Esters.
mol %	f.t.	mol %	f.t.	mol %	f.t.					
100.00	-180.1	65,01	-131.2	30.03	-131,2	Lecat, 1949				
96.43 90.60	-144.1 -135.1	59.69 54. 9 4	-131.2 -131.2	25.30 19.40	-131.2 -131.4	Name	Formula		A2	
85.30	-132.9	49.76	-131.4	16.00	-131.2			b,t,	- %	h.t.
81.36 78.06 69.78	-132.0 -131.6 -131.2	$\frac{45.01}{40.15}$	-131.4 -131.4	12.37 3.62	-130.9 -128.5 -127.8	Methyl formate	(C2H4O2)	+31.9	47	+91
69.78	-131.2	35.65	-131.2 series)	0.00	-127.8	Ethyl formate	$(C_3H_60_R)$	54.1	52	+102
100.00	-180.1	57.48	-131.4	27.69	-131.4	Methyl acetate Ethyl acetate	$(C_3H_6O_2)$ $(C_4H_8O_2)$	57.1 77.05	5 2 56	+110 +119
86.81 82.03	-133.1 -132.4	52.45 47.32	-131.4	23.50	-131.3	Propyl acetate	$(C_{5}H_{10}O_{2})$		60	+119
74.05	-131:4	42.58	-131.2 -131.4	$\frac{10.74}{8.00}$	-129.8 -129.0 -128.4	Ethyl propionate			60	216
72.80 67.18	-131.4 -131.4	43.60 37.72	-131.2 -131.4	4.42 0.00	-128.4 -127.8	Methyl glycolate			5 7	60
62.95	-131.4	33.07	-131.2							(3mm)

Boron	fluoride (Bl	F ₃) + Tri	methylamine (C ₃ H ₉ N)	Boron flu	oride (BF ₃ ,	+ Methyl	alco	hol (Cl	i ₄ 0)
Lecat,	1949			0'Leary a	and Wenzke, 198	33			
%		b.t.		M (BF ₃)	molar	%		р	
0		- 101			conductivity 25°				
47 100		+230 Az +3.5		1.118 0.558	23.44 29.26	95.86 90.25		124 131	
				.279	35.11 41.25	81.35 79.89 78.79		120 118 113	
Boron f		3) + Ace1	tonitrile (C ₂ H ₃ N)	.0699 .0350 .0175 .0087 .0044 .0022 .0011 .00055 .00027	47.28 52.42 55.38 55.02 49.19 38.05 23.78 11.74 6.19 5.86	66.23 59.12 56.74 51.65 50.99 45.11 42.08 35.26 34.84		88 60 53 29 34 9 12 21 23	
%		b.t.		.00007	5.27 2.05	32.55 31.42		42 158	Î
0 38 1 00		-101 +101 A +81,6							
				Boron fluo	oride (BF ₃)	(b,t,=.	101)	+ Alco	hols
				Lecat, 194	19				
Boron f	fluoride (BF	7 ₃) + Benz	Second con	np.		A	z		
ı				Name	Formula	b.t.	%	b.t.	mm q
Brown a	and Johannese	n, 1950		Methyl alcoh	nol (CH ₄ 0)	64.7	52	165 .7 58	760
mo1%	p	mo1%	p	Ethyl alcoho	ol (C ₂ H ₆ O)	78. 3	42	179.3	
100	40° 1.9	54.0	7.2	Propyl alcoh	nol (C ₃ H ₈ O)	97.25	36	51 198.2 56	15 5 760
98.1 96.8 95.4 94.6	1.9 3.2 3.8 4.6 5.1	53.2 51.7 50.8 49.7	7.0 7.2 7.7 58.2	Butyl alcoho	01 (C ₁₄ H ₁₀ 0)	117.75	31	228.7 64.5	
87.3 73.9 58.1	6.7 6.9 7.0	49.1 48.8	87.8 120.8	Boron fluo	oride (BF ₃) (b.t. =	101)	+ Acid:	s =
				Lecat, 194	19				
				Second com	ıp.		Az	······································	
				Name	Formula	b.t.	76	b.t.	p mm
				Formic aci		100.75	58	201.75 43	760 11
				Acetic aci	•	118	-	229 36	760 13
				Propionic	" $(C_3H_6O_2)$	140.7	31	241.7 62	760 17
				Butyric ac	id (C ₄ H ₈ O ₂)	162.45	28	263.45 64	760 11
				Crotonic a	acid (C ₄ H ₆ O ₂)	189	28	290 81	760 12.5
									\equiv

Boron trichloride (BC1 $_{3}$) + Methyl chloride (CH $_{3}$ C1)

Martin and Hicks, 1946

mol%	f.t.	E	mo1%	f.t.	E
			49.7	-124.4	125.4
100.0 90.0	_97.1 _101.8	-	45.0	-120.4	125.0
88.2	-102.2	_	40.0	~121.9	-
80.4	-106.3	-	35.1	-118.8	125.1
74.8 70.2	-109.0 -112.5	-	29.7 24.5	-117.1 -115.0	-
65.2	-114.2	$12\overline{5}.2$	19.8	-113.6	_
62.8	-117.3		14.4	-111.7	-
58.4	-119.8	124.9	9.6 0.0	-110.3 -107.6	-
57.8	-118.4	124.9	0.0	-107.0	-
E. 18	20019	125 10			

E: 48.2mol% -125.1°

Boron trichloride ($BC1_3$) + Ethyl chloride (C_2H_5C1)

Martin and Hicks, 1946

mo1%	f.t.	mo 1%	f.t.	
100	-138.4	45.0	-116,6	
90.1	-142.3	39.7	-116.3	
85.5	-143.6	34.9	-115.8	
80.0	-139.2	29.9	-116.1	
74.4	- 134.5	25.1	-115.8	
69.9	-127.4	20.0	-113.9	
64.2	- 125.5	14.9	-112.0	
60.0	-121.2	9.6	-110.6	
55.1	-119.5	ó.	-107.5	
50.1	-116.9	v	- 107.0	
00.1	-110,7			
(2+1)	f.t. = -115.	8 E ₁ :	85.7mo1%	- 143.9
		F	27 2ma14	116.3

Boron trichloride (BCl_s) + Propyl chloride (C_sH_7C1)

Martin and Humphrey, 1947

mo1%	f.t.	E	mo1%	f.t.	Е
100.0	- 122.3	-	45.0	- 127,5	- 141.8
93.8	123.7	-	40.0	123,6	_
90.0	126.0	-142.0	35.1	120.5	_
85.5	127.3	_	29.9	116.8	_
85.1	129.1	_	29.8	118.2	_
79.8	130.5	_	24.9	115.6	_
74.9	131.9	_	20.0	113.0	_
69.8	134.0	_	14.9	111.7	_
64.9	135.9	-142.9	10.0	108.6	_
62.8	_	-141.7	4.9	108.0	_
60.0	139.2	_	0.0	107.2	_
55.0	137.3	-141.8	0.0	-106.7	_
50.5	132.2	- 141.9	·		
47.5	-129.3	-141.8			
E : 57	.6mol%	141. 8			

Boron trichloride ($BC1_s$) + Isopropy1 chloride (C_sH_7C1)

Martin and Humphrey, 1947

mo1%	f.t.	E	mol≸	f.t.	E
100	-117.8	_	40.4	-111.9	_
95.3	118.3	_	36.7	112.7	-114.8
90.2	113,3	-	33.6	113.8	_
89.6	113.8	-	31.0	114.8	_
85.1	111.2	-118.3	27. 5	114.7	_
80.3	107.3	-118.7	25.0	~	-114.6
76.5	105.3	_	22,3	113, 1	-
75.8	105.0	-	17.5	112.8	_
70.6	105.4	_	13.9	110.6	_
70. 3	105.9	_	10.1	109.4	_
65.4	106.0	_	7.1	108.0	_
60.7	106.8	_	5.0	107.8	_
55.5	107.7	_	2.0	106.9	-
50.4	109.0	-	0.0	-107.3	_
45.4	-110.6	-			

(1+3) f.t. = -105.0 E₁ : 93.6mol% = -118.5

 $E_2 : 29.3 \text{mo} 1\% = -114.7$

Boron trichloride ($BC1_3$) + Phosgene ($COC1_2$)

Martin and Faust, 1949

mo1%	f.t.	mol%	f,t.
0.9 6.5 10.0 15.4 20.0 24.7 29.6 33.8 39.4 45.0	-107.3 108.3 110.0 111.6 113.6 115.0 118.0 119.6 121.0	49.9 54.2 57.6 64.6 68.8 73.6 78.4 83.6 87.8 93.0 100.0	-126.5 128.0 129.6 135.3 139.0 142.3(E:74.4mo1%) 141.0 138.0 133.0 133.0

Boron trichloride ($BC1_3$) + Acetyl chloride (C_2H_3OC1)

Greenwood and Wade, 1956

mo1%	f.t.	mo1%	f.t.	
0.0	-107	48.6	~55	(1+1)
27.8	-58	50.0	~54	
32.5	-57	66.1	~56	
36.9	-55.5	66.5	~57	
43.3	-55	69.0	~58	
44.3	-55	100.0	~98	

mo1%	p	mol%	p					=	
				Phosphor	us trich	loride (I	PC1 ₃) +	Benzene	(C_6H_6)
0.0	478 473	59.3 65.3	371	}					
5.2 10.8	473 460	68.9	341 314	Traube,	1895				
16.7	456	77.1	289	8	d	8	d		
28.6 36,2	434 415	77.1 81.4 89.7	242 210	II					
40.7	396	93.1	175	H	20				
48.6 52.7	394 3 7 6	100.0	86	100 96.893	0.88235 .89519	89.317 71.859	0.925 1.005	83	
1 02	0.0			94.133	.90629	59,658	1.07	142	
t	p	t	p	 	-				
	50mo								
-72	8	-13 . 0	217	ľ			_	_	
68	9	-8.5	261	Phosphor	us trichle	oride (PC	l_3) + E	ther ((C4H100)
59 54	16 23	-6.0 -3.5	287 322						
49 43	29	-0.5	322 359	Rozentre	ter, 1932				
11 38	29 42 55	-3.5 -0.5 +1.5 +3.0	391 420	II		d			
35 31	66	+6.5	420 473	mol%	0°	10°	18°		
24	86 13 2	+8.0 +10.7	500 552]					
20.5 -17.5	150	+13.4	604	0.00	1,609	1.531	1.576		
-17.5	174			18.78 20.34	.465	.450 .435	.430 .420		
				36.61	.450 $.315$. 300	. 283		
				55.62	. 120	, 100	.087 0.930		i
		nci v n		73.42 81.66	0.935 .888	$0.940 \\ .873$. 865		
Boron tr	icntoriae (enzoyl chloride	H 96.23	. 840	. 830	.820 .703		
		((C7H50C1)	100.00	.736	.725	.703		
C=======	d and Wada	1054		mo1%		η	-		
	d and Wade,			шотр	0°	10°	18°		
mo1%	f.t.	mo 1%	f.t.	[-				
0.0	- 107	56.2	-13.3	0.00	714.6	674.3 601.8	612.1 542.		
4.8	-22.8	65.5	-14.5	18.78 20.34	634.3 630.2 567.3	597.0	53 7.	1	
20.4 28.9	-15.8 -14.8	71.7 87.1	-12.8 -5.8	36.61	567.3	534.6 440.6	476.1 390.	9	
45.3	-13.8 -13.6 -13.7	87.1 98.3	-0.5	55.62 73.42	476.0 393.0	369.3	338.	9	
48.1 52.9	-13.5 13.7	100.0	-0.5	81.66	370.0	369.3 344.9	314.		
02.7	~ 10.7			86.23 100.00	355.2 295.0	318.0 268.1	298. 240.:		
mo 1%	p	mol%	p						
									
0.0	478		295			14- (PA	1	'amaka=	
34.3	380	53.9 56.2	285	Phosphor	us trichle	oride (PC	13) + (ampnor (C	10H16O)
35.4 39.6	378 361	65.4 68.1	254 238					•	
41.1	35 8 35 1	68.1 68.3	240	Schlundt	, 1903				
42.8 44.6	35 I 344	70.0 70.9	223 207	%	d (х) _D	%	đ	(α) _D
46.5	336	81.4	139 9 2	l					
48.2 48.5	324 328	88.3 93.6	64		· //FF	-10°	2 075	1 194F	10 07
50.5	319	100.0	0.1	0 26.1346	1.6655 .4031 4	- 4 6.96	2.075	1.2865	48.87
52.7	308			1	,	0°			ĺ
				0	1,6146	- 1	8.296	1.4498	47.48
·				3.0745	.5519 4	7.13 2	6.1346	.3888	48.09
				5.1442 6.7257	.5680 4 .5538 4	5.42 4 5.97 5	2.075 9.114	.2753 .1716	49.65 50.65
Ì			,	1 0.7207	,0000	20°	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,.,.,	20.00
				0	1,5794	•	3.0745	1,5519	47.13
				1.0468	.5714 4	6.81	5.1442	.5255	47.13
				1,1887	.5678 4	6.80			

25° 5.5447 1.5274 47.71 26.1346 1:3601 50.22 6.7257 .5190 48.00 42.075 .2516 51.43 10.028 .4878 48.44 59.114 .1510 52.29 18.296 .4199 49.37	Phosphorus tribromide (PBr $_3$) + Trinitrotoluene ($C_7H_5O_6N_3$) Pushin, 1940-46
0 1.5232* - 26.1346 1.3311 52.28 6.7257 .4825 50.08 42.075 .2304 53.31	% sat.t. f.t. E
18.296 .3870 51.47 59.114 .1281 54.19 * 50°	040 -40 2.5 - +42 -
% d	5 - 54.5 - 59 - 9 68.5 65 -
50° 60° 70° 80° 90° 59.114 1.1165 1.1048 1.0943 1.0816 1.0709	10 70 " - 15 76 " -
	20 79 " - 26.5 80.5 " - 29 81 " -40
[%] (α) _D 50° 60° 70° 80° 90°	33,5 80 " - 36 79,5 " -
59,114 55,38 56,39 57,16 58,13 58,71	45 75 " - 49 71.5 " -
	52.5 67 " - 60.5 - 67.5 - 68.5 - 70 -40
Phosphorus trichloride (PCl ₃) + Methyl malate I	75.5 - 72.5 - 74 -
(C ₆ H ₁₀ O ₅)	86 - 76 - 91,5 - 78 -
Grossmann and Landau, 1910	100 - 81 81
(α) c * at 20°	
50.326 25.004 5.298 red - 83.24 - 87.99 - 91.36 yellow -105.31 -110.18 -117.59 green -130.75 -139.98 -142.51 pale blue -166.71 -178.77 -184.03 dark blue -182.91 -195.37 -203.10 violet -211.22 -222.76 -230.84	Phosphorus tribromide (PBr $_3$) + Benzene (C $_6$ H $_6$) Traube, 1895
* g PCl ₃ in 100 cc	d
Phosphorus trichloride (PCl_3) + Ethyl tartrate ($C_8H_{14}O_6$)	20° 100 0.88235 98.025 .89509 93.262 .92697 85.319 .98295 71.760 1.09698
Grossmann and Landau, 1910	
(α) c* at 20°	Phoenharus trichlarida tetrahusmida (DC1 D-)
25.636 5.009 red -175.53 -163.71 yellow -221.95 -213.62 green -279.10 -274.51 pale blue -358.87 -344.38 dark blue -417.38 -378.32 violet -455.22 -421.24 • g PCl ₃ in 100 cc	Phosphorus trichloride tetrabromide (PC1 ₃ Br _{1₄}) + Nitrobenzene (C ₆ H ₅ O ₂ N) Fialkov and Kuzmenko, 1952 mo1% × mo1% × 20° 98.64 1.07 75.40 149 96.25 24.8 63.47 181 94.67 29.0 58.79 211 93.59 54.7 51.63 243 92.37 64.9 50.99 254 86.51 105 44.40 286 85.47 115

Phosphorus trichloride oct Nitrobenzene (C ₆ H ₅ O ₂ N)	abromide (PCl ₃ Br ₈) +	Arsen	ic trichl	oride (As	Cl ₃) + Et	her (C ₄ H ₁	o 0)
Fialkov and Kuzmenko, 1952	<u>.</u>	Usano	vich, 192	9			
mol% * mol%	н	%	d	н	molar co	nd. (AsC	13)
20°				18°	·		
97.24 14.1 59.44 93.95 48.0 49.59 83.98 135 44.94 76.57 189 16.89 66.32 249 0.00	323 341 403	0.00 0.90 1.53 3.93 6.58 7.14 8.54 12.20 15.71	2.16 2.12 2.09 1.98 1.88 1.86 1.82 1.72	1.3 1.8 2.2 2.2 1.9 2.1 0.9	147 12 138 16 118 21 72 23 193 20 131 23	} }	
Phosphorus trichloride oct Nitrobenzene (C ₆ H ₅ O ₂ N)	· ·	21.81 22.27 25.56 31.19 31.54	1.52 1.51 1.44 1.36 1.34	0.5 0.6 0.5 0.3 0.2	65 9 25 10 57 9 89 8		
Fialkov and Kuzmenko, 1952	ж	36.86 52.08 54.20 58.96	1.28 1.05 1.04	0.0 0.0	$\begin{array}{ccc} 08 & 0 \\ 10 & 0 \end{array}$).3).4	
200		58.96	1.00			1.4	
93,54 102 60,23 89,24 167 49,88 83,75 241 43,76 69,21 387	456 508 432	Terpu	gov, 1932				
		%			η		
Arsenic trichloride (AsCl ₃) + Stilbene (C ₁₄ H ₁₂)	0.00 10.15 22.02 32.55 44.03 53.13	1425 1380 1260 1155 1007	1259 1228 1108 1005 868	1088 1091 944 851 731	967 915 822 743 630	869 799 709 655 545
mol% f.t. mol%	f.t E	64.38	856 660	751 597	632 510	556 443	469 389
100 124 39.5 90 119 30 77.5 110 20 70 108 15	70 - 55 - 31 - 18 -19	70.01 75.93 86.18 93.57 100.00	540 476 370 308 268	497 444 345 284 240	431 392 311 257 223	393 - - - -	358 - - - -
60 98 0 49 84	-19 -	×	10°	18°	и 30°	40°	50°
Arsenic trichloride (AsCl ₃) + Carbon tetrachloride (CC1 ₄)	34.54 46.41	0.00275 0.89410 2.30700 0.40400 0.35340 0.32000	0.00291 1.08600 2.24200 0.33110 0.31820 0.24640	0.98000 1.90600 0.27090 0.24870 0.17500	0.82740 1.55600 0.20720 0.17920 0.12420	0.00403 0.70080 1.14400 0.14560 0.12700 0.09600
Sisler, Pfahler and Wilson	, 1948 (fig.)	51.00 60.48	0.25760 0.08153	0.20460 0.06200 0.01523	0.14000 0.03787 0.01187	0.09910 0.02600	0.06200 0.01967
mol% f.t. mol%	f.t.	69.59 73.83	0.01846 0.00811	0.00655	0,00455	_	-
0 -18 77 20 -26 80 40 -34 100 60 -43	-50 E -48 tr.t. -23						

				=-									
Arse	nic tri	chloride	(AsCl ₃)	+ Methy (C ₆ H ₁		e l	Arsenic	trichloride	(AsC l ₃) +	m_Toluid	ine(C ₇ H ₉ N)		
Gross	mann ar	d Landau	, 1910				Pushin	and Hrustano	vich, 1938	3			
C*		Ilom	(a) green	pale	dark	viol.	mo1%	f.t.	mo 1%	f.t.			
50.200 25.100 12.550 5.122 2.561	+6.39 9.32 10.84 11.52 8.20	+8.47 11.63 12.91 14.94 10.54	20° +10.72 15.38 17.13 18.55 14.06	blue	+15.90 22.83 25.10 25.97 20.30	+18.15	0 10 20 30 40 50 60	-20 +36 65 84 95 98 (1+1) +116	65 70 75 80 90 95	+145 157 162 158 102 +20	(1+3)		
* g	AsCl _s i	n 100cc											
	Arsenic trichloride (AsCl ₃) + Ethyl tartrate (C ₈ H ₁ , O ₆) Grossmann and Landau, 1910							trichloride and Hrustano		- p-Toluid	ine(C ₇ H ₉ N)		
			(a)				mo1%	f.t.	mo1%	f.t.			
_	red	yellow	green		dark	viol.		1.0.	1101/0	1.1.			
4.859	-10.2 -9.9 -2.4	1 - 14.91 5 - 14.49 3 - 14.01 7 - 5.15 4 - 4.53	-10.30 -18.74 -7.20	-27.33 -26.98 -26.18 -10.91 -3.70	-32.67 -31.79	- 39.64 - - 17.08	0 10 20 30 40 50	-20 +8 40 75 115 +155	60 70 75 80 90 100	+180 198 200 (198 164 +44	1+3)		
Arsen	nic tri	n 100cc	(AsCl ₃)	+ Anili	ne (C ₆ H	₂ N)				1,3,5-Xy1 (C ₈ H ₁₁ N)	lidine		
	n, 194				·		Pushin,	1948					
mol%		f.t.	mo1%	f.	t.		mo1%	f.t.	mo1%	f.t.			
0 10 19 25 30 40 44 57		- 19 +66 85 96 104 118 125	69.5 75.0 76.8 77.5 82.0 85.5 100.0	15 15 15 14 13	5 4.5 (1 8	+3)	0 10 39 48 59	- 19 +29 122 145 170	69 75 80 90 100	185 187 185 168 _6	(1+3)		
Arse	Arsenic trichloride (AsCl _s) + o-Toluidine (C ₇ H ₉ N)									+180 198 200 (1+3) 198 164 +44 1,3,5-Xylidine C _e H ₁₁ N) f.t. 185 187 185 187 185 168 (1+3)			
		Hrustano					Pushin a	and Hrustanov	ic, 1938				
mo1%		f.t.	mo 1%		t.		mo1%	f.t.	mo 1%	f.t.			
0 10 20 30 40 50 60		-20 +32 60 82 93 98 130 (1+1)	64 70 75 80 90 100	+12 14 14 14 10 -2	4 6 4 8 (1+3)	0 10 20 30 40 50	-20 +28 55 68 75 77 (1+1)	60 70 75 80 90 100	58 50 45 52			

					·	п					
ļ						 					
Arsenio	trichlor	ide (AsCl	a) +			mo1%	и	.	mo1%	ж	
	or_9,10_ D			C H. NA	sC1)		50°	60°		50°	60°
			,	1 2	JU1 /	0.00	_	_	50.03	0.359	_
Pushin	and Hrust	anovic. I	938			6.87	0.069	0.064	50,61	_	0.335
						13.47 16.75	0.253	0.173	52.40 52.66	0.341	0.328
mo1%	f.t.	mo 1	% <u>f</u>	. t.		19.28	_	0.256	54.97	$0.\overline{3}36$	_ [
0	-20	50	,	52		22.91 24.30	0.318	0.298	55.88 58.18	0.322	0.311
10	+20	60	í	.68		28.83	-	0.344	60.19	_	0.282
15 17	36	70	1	.82		29.55	0.373	-	61.49	0.294	- 1
1 20	38 (1 53	5+1) 80 90	i	.88 .9 2		33.20 34.75	0.403	0.363	64.59 65,62	0.265	0.254
30	.98	100	î	95		36.04	0.385		71.59 71.78 78.68		0.194
40	128					39.03 40.88	$0.\bar{3}95$	0.363	71.78 78.68	0.185	0.131
	= ===					41.36	_	0.358	11.08	0.113	-
						43.37 44.08	0.387	0.354	81.91	0.106	0.071
						45.16	0.379	_	86.43 86.71	0.076	-
Arsenic	trichlori	de (AsCl ₃) + Trin	itrotolue	ne	47,34	0.378	0.344	91.71	0.040	0.042
				(06N ₃)		47.35	0.0/0	~	95.58	0.033	0.038
			. ,	, , ,							
Pushin,	1940-46					<u> </u>					
						il					
	f.t.	E	%	f.t.	E	Arsenic	trichlor	ide (AsCl ₃) + Chl	oracetic	acid
0	- 19	_	7 5	69	-21]}			(C ₂)	H ₃ O ₂ Cl)	
20	-	_ 2 5	83	74.5	~	[]					
30 46	+18 40	- 30	93 100	78 81	-	Sumaroko	ova a <mark>nd G</mark>	lushchenko	, 1951		
58	54	- 25	100	01	-	mol &		đ			
						il í	50°	60°	70 °		
====											
,						0.00	2.0995	2,0785	2.058		1
		1. /1.01				21.60 29.77	1.9708 .9500	1.9515 .9004	1.931 .880		
Arsenic	trichlori	ide (ASC13) + Acet	ic acia (C2H4O2)	33.34	.9011	. 8797	858		
						46.00 74.57	. 8156 . 8076	.7975 .7900	.779 .772		
Sumarok	ova and G	ushchenko	. 1951			65.47	6735	6579	.641		
			, 1701			78.46	.5752	,5607	.546	1	
mo 1%		đ				85.66 89.18	.5124	.5030 .4690	.4860 .456		
	20°	50°	60°	70°		91.60	-	.4465	,433		
0.00	2,1646	2.0995	2,9785	2 0502		94.30 95.68	-	.42 2 9 .4115	. 399	ι	
0.00 18.75	~ TO40	1.9593	1.9387	2.0583 1.9177					.077		
27, 10	-	.8864	. 8666	.8468		mol%	_	η			
46.37 59.30	1,6230	.7068 .5696	.6880 .5509	.6680 .5332			50°	60°	70°		
58,23	.5142	.4666	.4454	.4297		0.00	822	745	689		ļ
78.26 89.70	.3835 .2165	.3376 .1752	. 3240 . 1628	. 3070 . 1514		21.60 29.73	1003 1084	894 965	812 867		
100.00	.0489	.0154	.0058	0.9925		29.73 33.34	1140	1013	907		
						46,00	1340 138 7	1166 1198	1016 1056		
mo 1%	•	n				74.57 64.47	1756	1485	1281		j
	20°	50°	60°	7 0°	1	78.46 79.30	-	1774 1809	1521 1541		
						85.66	2191 -	1989	1678		
0.00 18.75	1025 1213	821.8 872.8	744.9	688.7 702.4		89,18	2650	1989 2135	1779 1844		Ì
0.00 18.75 27.10	_	900.5	779.6 793.3	702.4		91.60 94.30	-	2222 2292	1902		
36.90	1378	932.5	819.1			95.68	2002	2328	1955		į
46.37 47.10	1466	923.7	831.9	736.7		100.00	3091	2446	2051		İ
47.10 59.30	1562	982.0	840.9	743.2		l					
70.10 78.26	1541 1487	970.2 946.0	830.4 812.0	727.7 713.1 667.9							
90.17	1312	946.0 879.3 765.0	812.0 759.9	667.9		į					
100.00	1209	765.0	650.0	550.0		I					

	% n
Arsenic trichloride (AsCl $_3$) + Trichloracetic acid ($C_3H0_2Cl_3$)	H _t D H _b H _t
Sumarokova and Babkov, 1951	16 . 5°
mo1% d 20° 35° 60°	35.38 1.5817 1.5880 1.6042 1.6210 52.12 .5455 .5511 .5660 .5791 100.00 .4937 .4986 .5102 .5200
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Arsenic tribromide (AsBr $_3$) + Methyl ether (C_2H_60) Usanovich and Rosentreter, 1932 and 1933 # d # d
mo1% n	18°
20° 35° 60° 0.00 1226(sic)1050(sic) 805 (sic) 13.93 1403 1153 851 25.26 1621 1361 952 31.15 1871 1479 993 36.20 1952 1556 1051 43.75 2292 1801 1219 60.76 3544 2592 1595 77.89 4039 2276	7.44 2.81 28.39 1.72 11.91 2.50 39.64 1.41 12.15 2.48 44.46 1.32 14.08 2.34 57.45 1.11 18.47 2.12 63.13 1.04 21.77 1.98 74.06 0.93 25.88 1.81 77.52 0.90
91.74 - 3248 100.00 - 3865	mo1% и 0° 18° 30°
Arsenic tribromide (As $3r_3$) + Naphthalene($C_{1.0}H_8$) Pushin and Krieger, 1914	94.76 0.2874 0.1675 - 93.74 .2829 .1622 - 89.98 .5271 .3718 - 87.637017 0.5026 80.77 - 1.354 1.310 77.47707 1.578 67.53866 2.008 64.40977 .157
mol % f.t. E tr.t. mol % f.t. E tr.t.	59.35 - 2.007 .329
0.0 31.0 - - 29.0 19.6 - - 4.5 28.7 - - 30.0 19.3 9.6 - 8.0 25.7 - - 30.7 19.7 - - 10.9 23.8 - 15.6 31.0 19.6 - - 15.5 20.6 9.3 17.2 32.0 19.6 9.6 19.8 19.4 17.2 9.3 17.1 32.9 19.4 10.0 19.9 20.5 16.3 - 17.1 35.0 21.6 9.9 19.9	54.25 - 1.850 .115 47.24847 .116 42.04716 1.953 41.49505 .708 29.65283 .438 0.00 0.0016
22.0 14.8 9.5 16.7 38.0 25.8 - 19.6 23.0 14.0 9.8 17.0 40.3 28.0 - 19.8 24.9 11.8 9.6 - 41.7 30.0 - 19.4 27.0 18.8 - 45.0 37.6 - 28.9 19.2	Arsenic tribromide (AsBr ₃) + Ethyl ether ($C_{\mu}H_{10}0$)
	Usanovich, 1927
	% d и % d и
Arsenic tribromide (AsBr ₃) + Toluene (C ₇ H ₈) Gryszkiewicz, Trochimowsky and Sikorski, 1927 d 16.5° 35.38	18° 0.00 3.43 0.016 20.71 2.00 1.272 0.54 3.39 3.165 24.58 1.83 1.256 2.20 3.20 3.913 32.42 1.58 1.084 4.88 2.98 4.008 35.05 1.51 1.037 5.06 2.97 3.242 37.74 1.45 0.934 5.82 2.90 3.003 sic 38.94 1.42 0.850 6.34 2.82 3.321 48.44 1.25 0.638 7.28 2.79 2.637 56.51 1.13 0.453 7.61 2.75 2.448 56.80 1.12 0.420 10.11 2.60 2.131 67.49 1.00 0.250 13.37 2.40 1.911 84.11 0.35 0.055

										 1
t	н	t	н		Arsenio	tribromid	le (AsBr _e) + Phen	yluretha (C _o H	ne ₇ 0 ₂ N)
15.0	67.49%	4.0	38.92%		Puchin	and Lowy,	1027		(- /	7-2-1
15.0 16.0	0.271 .264	$\substack{\textbf{4.0} \\ 10.0}$	0.894 .875		Fushin	and Lowy,	1926			
10.0 17.0 18.2 19.5 22.0 23.0 25.5 27.5	. 257 . 250	$\substack{14.0\\15.0}$. 863 . 859		mol%	f.t.	E	mo1%	f.t.	<u>E</u>
19.5 22.0	. 244	$\frac{18.0}{20.0}$. 850 . 844		0	31 27.7	_	50	12.8	+0.5
23.0	.221 .209	24.0	.831		10 20 25	27.7 22.5	-4.4	50 60 7 0	12.8 19.7 29.8	+0.5 -2.2 -3.0
25.5 27.5	.200	$\begin{array}{c} \textbf{28.0} \\ \textbf{31.4} \end{array}$.819 .808		25	20.4	+0.7	80	37.8	-0.0
30.0 33.0	. 190 . 1 7 9	3 2. 5	.804 24.58%		30 35	15.6 12.2	-2.4 -0.5	85 100	40.6 48.3	~
	56.80%	18.0	1.256		40	6.8	-1.5			
18.0	0.420	25.0	1.251							
25.0	0.360		5.82%		į!					
		$\substack{18.0 \\ 25.0}$	3.003 3.121		Arsen	ic tribrom:	ide (AsBr) + Nitro	benzena	
			2.20%					(C ₆ H ₅		
		18.0	3.913							
		$\frac{21.5}{25.0}$	4.057 4.206		Berns	tein, 1941	fig.			
						f.t.	,	no1%	f.t.	
			·		100	+5.7		50	+3	
Arsenic	tribromide (AsBr.	+ Azobenzene	•	80 62.7	-7 -16			+18 +31.1	
	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(C	12H10N2)						
Pushin,	1948				mo1%	и		no1%	н	
mo1%	f.t.	mo1%	f.t.				18°			
					93.94 91.06	0.73 1.63		58.91 45.07	1.042 1.506	
0 45	30 40 . 5	70 80	53,5 58		86.44	1.42	27 4	11.37	1.722	sic
50 60	43 48	90 100	58 63 68		83.10 81.89	1.31 0.95 0.32	3	39.60 33.57	2.812	510
00	70	100	08		68.06 67.35	0.32 0.45	24 : 38	22,00	1.347	
Arsenio	tribromide	(AsBr ₃) +	Aniline hyd	drochloride	Arceni	c tribromi	de (AsBr.) + Trinii	rotoluer	ne .
			(C_6H_8NC1)		Arseni	C CIIDIOMI	de (ASDIS	(C ₇ H ₅ (
D 1 .	and Lowy, 193	24						, ,		
				·	Pushin	, 1940-46				
mot%	f.t. E	min.	tr.t.	min.	76	f.t.	E		f.t.	E
0	31 -	, ~ <u>-</u>	-	-	0	31	-	50	65	28.5
10 10	94.2 30.5 110.2 30.0 122.5 29.5 129.3 28.0	1.5 1.4	-	- [5 10	44.5	29	60 7 0	68 71	27.5 26
20 30	122.5 29.5 129.3 28.0	$\substack{\textbf{0.9}\\\textbf{0.4}}$	-	-	20	52 58.5	29.5	80	74 78	22 20
35	131.9 27.5	0.4	-	-	30 40	61 63	29 29	90 100	81	40
40 43	133.2 27.5 137.0 -	0.3	132.5	0.2						
45 47	137.0 145.5 28 151.2 25 155.0 -	-	132.5 132.4 132.2 132.3	0.4						
49 50	155.0 - 157.5	-	132.3 132.2	0.6						,
52 54	159.0 _ 162.0 _	-	132.2 129.8 129.0	0.8 0.7						į
56	163.5	-	128.6	0.4 0.5 0.3						
58	166.0 -	-	128.0	0.3						
					!					

730					. 11111110	WIDE					
Arseni	c tribromi	ide (AsBr	3) + Pheno	1 (C ₆ H ₆	0)	Arsenic	triiodide	(AsI ₃) +	Naphthale	ne (C ₁	_о Н ₈)
Pushin	and Lowy	, 1926				Pushin,	1948				
mol%	f.t.	Е	min	1,		mo1%	f.t.	E	mo1%	f.t.	E
0 10 20 30 40 50 60	31 26.5 23.0 19.5 15.6 11.0 10.0	6.2 6.5 6.5 6.2 7.5 7.5	0.2 1.0 1.2 1.6 2.2 1.4	}		0 12 20 30 40 50	141 135.5 133 131 130 129	73.5 73.5 74.5 75 75	60 70 86.5 97 100	126 120 101 78 80	76 76 76 78 -
80 90 100	24.0 32.0 40.8	7.0 6.5	0.9 0.5) ;		Arsonia	+riiodide	(AsI.)	+ Phenanthr	ene (C.	. H)
		<u>-</u>		<u>-</u>				(1313)	· Inchancin	ene (e ₁	410/
						Pushin,	f.t.		mo1%	f.t.	E
	tribromid	-	+ Resorc	inol (C ₆ 1	H ₆ 0 ₂)	0 10 20 30	141 135 132 130	87 88 90 91	60 70 80 94.5	119 108 94 97 100	93.5 93.5 94 93.5
mol%	f.t.	Е	min.			40 50	128 124.5	92	100	100	
0 10 20 30 40 50	31.0 50.2 60.0 69.8 78.5 83.2	30.0 30.6 30.0 30.0 29.6	1.5 1.4 1.2			Arsenic Hertel,		(AsI ₃) +	· Iodoform	(CHI ₃)	
60 70	83.2 87.5 94.0	29.8 29.4	0.4			- %	f.t.	%	f.t.		
100	100.5	29.8	-			0 10 20 30 40 43	142 132.5 120 109 101 98 E	50 60 70 80 90 100	100.5 104 109.5 113.5 119.5		
Arsenic	tribromid	le (AsBr ₃)) + 1-Naph	thol (C ₁	(0 ₈ H ₀	-					===
Pushin	and Lowy,	1926			:	Arsenic	triiodide	trisulf	ide (AsI ₃ :	S., 1	
mo1%	f.t	E	mo1%	f.t		111 501110			m trisulfic		I ₃ S ₂₄)
0 10	31.0 24.8	20.0	50 65	57.0	19.2 19.4	Hertel,					
20 30 40	20.8 32.5 44.8	20.0 20.8 20.8 20.8	80 90 100	69.8 81.5 88.5 96.0	19.4 19.5 19.2	[%]	f.t.	m.t	··		
	11,0	20,3		70.0		0 30 50 70 100	110 105 100 98 93	110 100 97 95 93			
					1						

	 _					I				
II .	nium trich (2H ₃ O ₂ C1)	loride (S	5bCl ₃) + N	Monochlo	racetic		%	20°	η 15	5.5°
	Usanovich and Sumarokova, 1951						43			
mo1%	f.t.	E	mo1%	f.t.			12 14	1032 1000 977)44)10
0.00 7.34 20.95 23.46 30.47 34.44 43.74	73,2 67,5 56,0 51,3 46,5 47,3 47,0	-	49.97 62.62 68.80 75.05 90.26 00.00		(1+1)		18 25 32 40 50 60 75 90	977 918 881 840 794 754 702 671 643		556 517 517 5324 787 748 709 687
mo 1%	50∘	н 60°	7	70°						
3.90 9.81 17.60 23.54 28.22 34.79	1.295 - 4.348 4.600 4.433	1.98 4.83 4.90 5.05 5.58	3. 32 5. 9 5. 8 5.	. 147 .957 .324 .324 .558 .750			arli, 1929		+ Benzald	lehyde(C ₇ H ₆ 0)
37.14 43.74 49.97 50.92 53.55 54.89 62.62 66.59	4.386 4.322 3.151 3.390 2.993 2.948 2.705 2.255	5.70 5.45 4.77 4.40 3.73 3.48	6. 7 6. 5 5. 4 5. 7 4.	383 607 762 187 219 899		0 20 30 40 50	1.6798 .5095 .4419 .3626 .3014	80 90	1,2411 ,1911 ,1426 ,0504	
72.15 79.74 85.24	1.744 0.982 0.377	2.39 1.15 0.47	8 2. 5 1. 2 0.	868 429 544		%	20°	n 13.2°	9°	3°
Sulfur 1	monochlori	de (SC1) + Benze	ne (C ₆ 1	H ₆)	0 20 30 40 50 60	1118 1220 1266 1338 1383 1417 1465	1161 1301 1367 1462 1532 1601 1654	1279 1398 1470 1562 1624 1710 1767	1389 1705 1826 1900 1936 2073 21 8 8
de Carl						80 90	1487 1595	1681 1804	1818 1906	2204 2339
100 80 70 60 40 30 25	+5 0 -5 -10 -30 -40 -50	20 12 8 6 5 3	-60 -70 -80 -90 -92 -90 -80	E		1	undt, 1903		+ Camphor	· (C ₁₀ H ₁₆ 0)
1	-00					8		d	(α) c	
*		1	鬼		đ	 		20°		
0 5 12 14 18 25 32	.40 .40 .44 .31	20° 738 158 778 551 492 714 033	40 50 60 75 90 100	0.	2290 1550 0880 9950 9239 8790	9.1	4362 3907 1721	1,6768 .6345 .5620 .4562	37.30 39.31 42.48	L
										

		49.93mo1%
Sulfu	r hexafluoride (SF ₆ ') + Propane (C ₃ H ₈)	30.00 20.24 1.19 23.83 9.06
	and Rowlinson, 1955; Clegg, Rowlinson and	40.00 25.87 1.66 29.36 8.29 45.00 29.12 1.98 32.40 7.76 50.00 32.81 2.43 35.65 7.03 54.26 36.52 - 38.42 - 38.54 - 38.54 - 38.50 - 38.54 - 38.54 - 38.50 - 3
t	P d _g d ₁	55.03 37.35 - 38.59 4.66 38.59 4.66
	0%	55.35 37.72
50.00 60.00	16.93 0.859 10.15	55.59 38.03
70.00 75.00	25,57 1.46 8.98 28,16 1.67 8.63	38.71 55.78 38.37 38.63
80.00 85.00	25,57 1,46 8,98 28,16 1,67 8,63 30,93 1,92 8,30 33,95 2,24 7,86 37,19 2,70 7,32 40,70 3,52 6,41	55.84 38.46 38.49
90.00 95.00	37.19 2.70 7.32 40.70 3.52 6.41 41.93 4.92 4.92	68.87 mol %
96.66		21.00 20.25 1.27 21.08 9.33 25.00 22.29 1.44 23.12 9.01
	nd d ₁ = density in gas and liquid (in s/1); the critical points are underlined	25, 00 22, 29 1, 44 23, 12 9, 01 30, 00 25, 09 1, 70 25, 91 8, 62 34, 30 27, 66 1, 97 28, 45 8, 16 39, 22 30, 90 2, 39 31, 56 7, 61 40, 00 31, 47 - 32, 18 7, 55 45, 00 35, 24 3, 34 35, 71 6, 46
		39,22 30,90 2.39 31,66 7,61
t	dew point bubble point P d _g P d ₁	30, 22 30, 90 2, 39 31, 66 7, 61 40, 00 31, 47 - 32, 18 7, 55 45, 00 35, 24 3, 34 35, 71 6, 46 46, 39 36, 45 - 36, 70 - 46, 59 36, 76 4, 87
	16.32mo1%	46,66 36,69
40.00 45.00	16.92 0.833 21.21 9.60 18.22 0.967 23.26 9.41 20.44 1.11 25.64 9.12	81.49 mol %
50.00 55.00	16,92 0.833 21.21 9.60 18,22 0.967 23,26 9.41 20,44 1.11 25,64 9.12 22,86 1.28 28,08 8,78 25,52 1.47 30,70 8,49 28,38 1.70 33,45 8,12 31,57 2.00 36,35 7,68	21.00 21.59 1.40 21.63 9.22 25.00 23.67 1.59 23.78 8.94
60.00 65.00 70.00	22. 87 1. 28 28. 08 8. 78 25. 52 1. 47 30. 70 8. 49 28. 38 1. 70 33. 45 8. 12 31. 57 2. 00 36. 35 7. 68	1 30 00 26.56 1.88 26.69 8.51
70.00 75.90 78.06	31,57 2,00 36,35 7,68 35,12 2,40 39,28 7,05 37,81	1 40.00 33.17 - 33.27 -
78.27 79.72	39.11	42.23 34.82 3.34 34.91 6.70 44.22 36.43 4.99 36.43 4.99
79.86 80.52	39.79 - 41.98 - 42.15 -	87.70 mol %
81.32	40.62 42.29 4.67 42.29 4.67	21.00 21.52 1.39 21.70 9.17 25.00 23.66 1.59 23.82 8.84 30.00 26.56 1.88 26.69 8.44
81.91	41.39	$ \begin{bmatrix} 30.00 & 26.56 & 1.88 & 26.59 & 8.44 \\ 34.30 & 29.22 & 2.22 & 29.37 & 8.01 \\ 40.00 & 33.13 & 2.87 & 33.27 & 7.23 \end{bmatrix} $
		34, 30 29, 22 2, 22 29, 37 8, 01 40, 00 33, 13 2, 87 33, 27 7, 23 42, 00 34, 62 3, 25 34, 75 6, 76 44, 29 36, 44 4, 99 36, 44 4, 99
	3 2. 89mo1%	100 %
25.06 30.00	13.84 0.730 19.19 9.88 15.70 0.835 21.21 9.68 17.68 0.943 23.15 9.47 20.36 1.15 25.93 9.00 17.68 0.943 23.15 9.47 20.36 1.15 25.93 9.00 17.68 0.943 23.15 9.00 17.68 0.943 23.15 9.00 17.68 0.943 28.85 8.68 17.65 31.34 8.28 17.65 21.9 37.35 7.22 17.65 21.9 37.35 7.22 17.65 21.9 37.35 7.22 17.65 21.9 37.35 7.22 17.65 21.9 37.35 7.22	0 11 12 49
30.00 34.30 40.00 45.00	0 15.70 0.835 21.21 9.63 17.68 0.943 23.15 9.47 0 20.36 1.15 25.93 9.00 0 22.93 1.33 28.55 8.68	20.94 21,26 1.35 9.39 25.01 23,40 1.54 9.12
50.00 55.00	0 25.73 1.55 31.34 8.28 0 28.88 1.82 34.26 7.78 0 32.42 2.19 37.35 7.22	29.65 26.05 1.80 8.70 34.04 28.78 2.11 8.23
60.06 65.54	32,42 2,19 37,35 7,22 4 37,15 - 40,55 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
66.89	40.04 4.00	45.58 37.10 5.03 5.03
67.69 67.91	40.93	
68, 14	40.88	
	40.77	

Sulfur hexafluoride	(SF ₆)	+	Perfluoropentane	
					(C ₅ F ₁₂	,

Newcome and Cady, 1956

р	
Dew point	Bubble point
25	0
646.5	-
	1500
	_
	_
17930	~
	Dew point 25 646.5 681.7 1045.1 1323.8

Trichlorsilane (SiHCl₃) + Ether ($C_4H_{10}0$)

Sisler, Schilling and Groves, 1951 (fig.)

mo1%	f.t		mo 1%	f.t.		
	I	II		I	II	
100	-12 3	- 117	50	- 142	- 148	
90 80	- 126 - 130	- 120 - 122	40 20	- 148 - 137	-	
60	- 139	- 122	0	-128	-	

Trichlorsilane (SiHCl $_3$) + Tetrahydrofurane (C_4H_80)

Sisler, Schilling and Groves, 1951 (fig.)

mo1%	f.t.	E	mol%	f.t.	E
100 90 84.7 80 70 60	-109 -112 -114.3 -109 -97 -92	-114 -114.3 -114	50 40 20 10 3.8 0.0	-91 -92 -109 -120 -129.3	-129.3 -129.3
				(1-	1)

Silicium tetrafluoride (SiF $_{i_{+}}$) + Trimethylamine (C $_{3}H_{3}N$)

Wilkins and Grant, 1953 (fig.)

mo1%	f.t.	mo 1%	f.t.
44 50 56 60	81.5 81.5 (1 73 E 84	67 +1) 70 75	89 (1+2) 88.5 87
mo1%	p	mo1%	p
0 33,3 50	730 400 10	66.7 71.4 75	10 400 700

Silicium tetrachloride (SiCl_{μ}) + Benzene (C₆H₆)

Traube, 189	95	
8	d	
	20°	
100 93.783	0.87898 .9004	

100	0.87898
93,783	.90044
89.831	.91251
82.214	.93474

Silicium tetrachloride (SiCl₄) + Naphthalene $(C_{1}_{O}H_{8})$

Pushin, 1948

mo1%	f.t.	mo1%	f.t.	
0 10 19.5 30 40 50	-68.7 +23 40 50 57 63	60 70 81 85 100	66.5 69.5 73 74 80	

762			SILICIU	M TETRAC	HLORID	
·Siliciu	ım tetrach	loride (Si		arbon disu S ₂)	lfide	
Bond a	and Stephe	ns, 1929			i	
%	sat.t.	f.t.	%	sat.t.	f.t.	
0.00 1.02 1.16 1.30 3.97 5.34 5.63 8.10 11.54 14.81 16.88 21.81 27.93 32.00 39.28 41.72 45.95 47.45	-77.0 -72.4 -46.9 -38.6 -37.5 -23.2 -20.1 -15.0 -12.8 -8.2 -6.3 -5.5 -4.9 -4.8 -4.8 -4.8 -4.9	-67.7 -76.5 -79.2 	53. 13 54. 71 59. 15 62. 56 66. 68 69. 33 76. 82 80. 60 87. 63 89. 73 91. 65 93. 67 95. 34 97. 12 98. 03 98. 91	-5.0 -5.1 -5.4 -6.1 -7.0 -8.1 -9.2 -12.9 -16.6 -22.0 -27.5 -32.4 -46.6 -55.7 -57.0 -70.2 -72.1 -79.1	-77.0 -76.5	
Lecat,	1949					
%		b.t.	•			
0 100		56.5 55 61	Az			
Siliciumtetrachloride (SiCI _{μ}) + Chlortrimethyl silane (C ₂ H ₉ ClSi) Lecat, 1949						
78		b	.t.			
			4 5			

Silicium tetrachloride (SiCl $_{\rm h}$) + Carbon tetrachloride ($CC1_4$)

mol	%			
L	v	p	Pε	P ₁
00.0	100.0	25°		
3.4	56.4	$\frac{114.9}{153.0}$	86.3	66.0
1.3	53.7 35.2	$157.0 \\ 179.1$	84.3 63.0	72.7 116.1
2.8 9.8	33.1	184.2	61.0	123.2
6.8	22.7	198.5	45.1	153.4
0.0	0.0	238.3	-	~

	ın, 1955			
mo1%	f.t.	m.t.	tr.t.	E
100	_22.8	- - -		~
95	29	-31.8	-60	-90
95	28.7	33	67.7	_
90	33.5	36	63	- 87
87.5	33.5	42.5	63	- 87
85	37.5	_	67.5	- 87
83	40	46.8	65	- 86
80	47.3	58	68	-86.5
80	45	55	68	- 86.5 - 85
77. 3	51.2	58	67.2	- 86
75	46.5	_	69	-85.5
72.5	55	-	67.5	- 86.7
70	58	_	66.5	- 82
70	59	_	67.5	- 86
67.5	60	-	-66	- 83
65	64.5	-	-	-84.5
60	68	-	_	-82.5
55	72	_	_	- 84
50	76.8	_	_	- 84
45	81 .2	-	_	- 85
42.8	82.6	-	-	- 85
40	-	-	-	-81.5
40	_	_	_	- 85.5 - 85
40	_	-	-	- 85
35	-	_	-	-85.5
25	82	83		-
25	81	83	-	-
25	76.5		-	_
20	78.2	-81.2	-	_
20	<u>76</u> _	-	-	-
10	73.5	-	~	_
0	-69.7	-	-	_

Silicium tetrachloride (SiCl $_{\mu}$) + Ether (C $_{\mu}H_{1,0}0$)

Sisler, Batey, Pfahler and Mattair, 1948 (fig.)

mo1%	f.t.	mo1%	f.t.
100 90 80 60	-123.5 -128.0 E -114.5 -94.5	40 20 0	- 84 - 76.5 - 69

SILICIUM TETRACHLOR	IDE + DIPHENYL ETHER 763
Silicium tetrachloride (SiCl $_{ m h}$) + Diphenyl ether (C $_{ m 12}H_{ m 10}$ 0)	Silicium tetrachloride (SiCl ₄) + Dioxane ($C_4H_8O_2$)
Sisler and Cory, 1947	Kennard and Mc Cusker, 1948
mol% f.t. mol% f.t.	mol% f.t. mol% f.t.
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	18.1 -11.9 62.4 1.2 22.0 -9.8 62.5 1.2 24.9 -8.3 64.0 1.6 28.2 -7.0 64.2 1.8 30.6 -6.0 66.4 2.1 34.0 -4.9 67.4 2.2 38.0 -3.9 70.3 2.8 42.2 -2.9 72.4 3.3 44.5 -2.2 73.8 3.7 47.8 -1.7 74.6 3.9 48.8 -1.4 77.0 4.5 51.9 -0.8 80.0 5.3 52.7 -0.7 82.2 6.0 54.8 -0.3 84.0 6.6 57.0 0.0 88.2 7.8 57.5 0.3 90.1 8.6 57.5 0.4 92.0 8.9 59.9 0.7 93.4 9.3 60.4 0.7 94.5 9.6 61.8 0.8 100.0 11.8
Volnov, 1954	Silicium tetrachloride (Si Cl ₄) + Acetonitrile
t mol%	(C ₂ H ₃ N)
L ₁ L ₂	Lecat, 1949
-70 72.4 1.9 -60 67.5 4.8 -50 60.0 5.7	% b.t.
-50 60.0 5.7 -40 45.9 8.1 -36 44.0 10.6 -32 18.0 18.0 C.S.T.	0 56.5 9.4 49.0 Az 100 81.6
Silicium tetrachloride (SiCl _h) + Tetrahydrofurane (C _h H ₈ 0) Sisler, Pfhaler and Mattair, 1948 (fig.)	Silicium tetrachloride (SiCl ₄) + Acrylonitrile (C ₃ H ₃ N) Lecat, 1949
mo1% f.t. mo1% f.t.	% b.t.
100 -108.5 40 -85 83 -113 E 20 -77 80 -110 0 -69 60 -94	0 56.5 11 51.2 Az 100 79.0

Siliciu	um tetrachlo	ride (SiC	l _ե) + Ani	sole (C	₇ Н ₈ О)	i	um tetrachi (C ₈ H _{1 o} 0)	loride (SiCl ₄) + Methyl-m_cresyl-
Sisler	and Cory, 1	94 7				Sisler	, Wilson an	nd al., 1948	(fig.)
mo1%	f.t.	E I	no 1%	f.t.	E	mo 1%	f.t.	mo1%	f.t.
100.0 97.2 92.5 89.8 85.8	-37.5 38.5 40.0 41.0 42.5		48.5 46.4 45.0 42.7 40.6	-58.0 58.0 58.5 59.5 61.0		100 80 60	_55.5 _63 _67	40 18 0	-71 -74.5 E -69
81.4 78.4 75.4 72.1 70.0 67.4 66.5 63.8 61.1	44.5 46.0 47.9 49.0 50.0 51.5 52.0 54.5	-	38.2 36.5 33.9 30.8 27.3 21.9 19.8 16.9 13.0	61.5 61.0 60.5 60.5 61.0 62.0 63.0 64.5 68.0	-72.5 -72.5	Siliciu Volnov,		oride (SiCl ₄)	+ Ethylacetoacetate $(C_6H_{10}O_3)$
59.2 57.3 52.7 50.5	59.0 59.0 58.0 57.8 _57.7	-59.5 -59.5 -	9.0 5.5 2.4 0.0	71.0 70.0 67.0 64.0 -62.5	-72.5 - -	t	mo19	L ₂	
49.1	(1+2)	_				-70 -65 -50 -26	74.4 72.0 71.0 67.5 64.9	2.0 5.0 7.7 9.9	
Sisler	, Wilson and	d al., 194	18 (fig.)		-10 +2 +10	64.9 62.5 61.0	11.9 13.1 14.4	
mo1%	f.t.	mol%	f.	t.					
100 90 80 70 60 50	-38 -40 -42.5 -44 -45 -46.5	40 30 20 10 5	-4 -5 -5 -6 -7	0 4 2 '1 E		Siliciu Pushin,		oride (SiCl ₄)	+ Azobenzene (C ₁₂ H ₁₀ N ₂)
							f.t.	mo1%	f.t.
Silici	um tetrachlo	oride (SiC		enetole H _{1 o} 0)		0 9.5 19.5 29.5 39.0 47.5	-68.7 +21 37 43 46.5 50	60 69.5 80 87 95 100	55 59 62.5 64.5 66.5 68
Sisler,	Wilson and	al., 1948	(fig.)		·				
mo1%	f.t.	mo1%	f	.t.					
100 93 80 70 59 50	-30 -33 -35 -38 -40 -42	40 30 20 2+3) 6		44 45 49.5 70.5 69					

Silicium tetrachloride (SiCl $_{ m h}$) + Ethyl alcohol (C $_{ m g}{ m H}_{ m g}0$)					ane (C ₄ H ₈ O ₂)
Volnov, 1954	Kennard mol%	and Mc Cusk	er, 194	E E	
t mol %	1110176	Ι Ι	II	I E	II
L ₁ L ₂	0.0	+5.4	-2.3		
-70 74.3 0.1 -55 70.2 4.5 -45 67.5 5.0 -40 65.2 6.3	0.7 2.4 3.2 4.5 6.8 8.4	4.7 3.9 3.7 2.9 2.0	-2.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- - - - -
Wertyporoch and Altmann, 1934 M (SiCl _h) × M(SiCl _h) × 0° 0 0.00218 0.04150 0.1018 0.00432 .01833 .06070 .1282 .00862 .03100 .11350 .1474 .01706 .05030 .14500 .1486 .02534 .06700 Silicium tetrachloride (SiCl _h) + Propyl alcohol (C ₃ H ₈ 0) Volnov, 1954 t mol% L ₁ L ₂ -70 65.8 11.6 -60 62.2 26.9 -51 53.4 35.3	6.8	2.0 1.2 0.4 +0.0 -0.8 2.2 3.6 3.9 5.8 6.1 6.3 6.9 7.4		-11.4 -11.4 -11.4 -11.4 -11.4 -11.4 -11.4	-13.5 -13.5 -13.5 -13.5 -13.5 -13.5

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SULFUR DIOXIDE + METHANE

36° 49.65 50.21 50.87	210.8 192.5 1.8 158.0 37.5
	134.0 - 119.6 - 91.7 -
	015
44.92 50.54 55.82 84.97	315.5 - 206.0 - 99.5 - 81.2 -
	~ ~
0= ==	459.8 - 333.5 -
53,60 73,25 84,68	183,5 - 86,9 - 83,9 -
73.6 mo1%	
35°	-
. 38,70	
39.25 41.72	390.8 10.9 299.0 12.6
. 43.54 . 44.66	219.5 48.0 161.0 72.0
44.97 45.77	150.8 76.8 107.0 95.7
45.86	102.5 96.5
46.14	98.6 98.0
47.31 48.79	97.4 - 96.2 -
3 49.61 6 53.53	96.1 _ 93.5 _ 93.4 _
.9 55.36	92.0 - 91.8 -
	7140 -
42.36 47.88 50.26 50.55 51.22 51.50 51.59	398.0 5.4 263.6 28.5 162.2 70.2 157.1 75.0 133.4 77.4 116.0 105.5 110.0 -
. 52.99 .6 55.42	107.0 105.2
5 64.49	98.0
47° - 50,83 - 54,74 - 55,09 - 55,46 - 55,07 - 56,36 - 59,46 - 59,46 3,0 64,82	1 162.5 64.5 148.4 74.6 6 134.0 108.0 7 123.5 - 0 122.0 - 116.0 - 0 115.7 -
	49.65 50.21 50.87 51.85 59.55 37° 44.92 50.54 55.82 84.97 40° 37.75 44.83 53.60 73.25 84.68 73.6 mol% 35° 38.70 39.25 41.72 43.54 44.66 44.97 45.76 44.97 45.86 47.31 48.79 49.61 46.14 47.31 48.79 49.61 46.14 47.31 48.79 49.61 50.26 53.53 8 53.60 9 55.36 57.61 42° 42.36 47.88 50.26 55.36 50.55 51.55 51.55 51.55 51.55 51.55 51.55 51.55 55.40

SULFUR DIOXIDE + ETHANE

40.4 mol%
350
16.07 1028.0 3.0 40.21 111.5 50.4 17.44 895.1 5.1 41.30 74.0 57.0
18.88 778.4 7.8 41.54 70.1 59.6 20.57 674.1 9.9 42.13 60.8 - 24.21 515.3 10.8 42.38 60.2
28.37 386.4 17.1 42.84 60.1 - 34.33 255.5 23.4 67.12 59.0 -
42° 16.07 1214.0 - 45.91 74.9 65.4 17.42 1043.0 - 46.37 66.5 66.0
17.42 1043.0 - 46.37 66.5 66.0 18.62 929.0 3.0 46.61 65.9 - 20.50 784.1 6.6 46.77 65.0 -
22.49 668.3 8.4 46.89 64.7
30,51
47° 17,05 1228,1 - 47,34 113,0 54,0
17.62 1155.1
18.65 1035.5 - 50.21 66.8 - 21.84 777.5 5.4 50.46 66.5 - 24.19 651.5 9.0 59.47 66.2 -
31.09 410.0 17.0 76.33 65.3 - 38.33 263.0 27.0
55° 19.06 1185.5 - 41.26 263.9 24.0 20.56 1073.3 - 51.85 123.5 49.5
20,56 1073,3 - 51,85 123,5 49,5 21,95 936,8 - 54,33 83,9 63,3 23,87 794,0 3,6 55,07 73,4 -
26,98 624.0 7,5 55.42 71.0 _ 29,45 533.0 10.5 56,23 71.0 _ 34,34 398.0 15,6 87,35 66,5 _
63°
23,43 989,0 - 55,29 146,6 38,1 26,46 788,3 - 60,07 92,3 63,3 28,28 691,4 - 60,95 81,2 70,7
31.59 558.2 2.7 61.56 75.2 - 37.34 396.8 8.4 61.90 74.9 -
43.41 291.8 16.8 64.53 74.6 - 47.22 239.6 21.6 84.41 71.0 - 71°
26.65 911.6 - 64.43 105.5 60.0
31.62 671.3 - 66.94 82.1 - 35.08 546.8 2.4 67.03 81.2
41.30 384.5 10.5 68.06 81.0 - 47.30 284.9 17.4 69.88 20.0 - 57.56 171.5 31.5 84.29 74.9
3,11,

				Sulfur dioxide ($S0_2$) + Butane (C_4H_{10})
24.19	1035.5 -	68.55 10	05.2 70.2	Seyer and Todd, 1931 mol% sat.t. mol% sat.t.
30.51 35.06 37.43 39.25 43.50 51.79 64.41	770.9 635.0 - 556.7 - 502.4 2.4 404.0 8.1 270.5 18.9 145.4 44.4	70.35 8 71.06 8 72.34 8 76.27 8	55.0 77.9 39.6 - 39.3 - 38.1 - 36.0 - 33.0 -	4.7 -26.0 61.6 -15.0 14.1 -8.0 63.9 -16.0 26.4 -4.7 66.1 -17.2 30.7 -5.1 90.83 -64
23, 21 27, 41 31, 10 35, 08 40, 19 46, 05 48, 85 55, 44 67, 10	1144.4 - 934.1 - 794.3 - 551.0 - 422.9 1.4 369.5 4.5 272.0 9.9 161.6 29.1	68.77 14 70.52 16 72.49 11 74.44 10 74.82 16 76.40 9	48.1 36.6 34.9 42.9 16.9 50.4 44.0 83.0 11.0 - 17.1 - 12.3 - 34.3 -	C.S.T.: 30mo1%(28.4wt%) 1.25 atm.(P ₁) -4.7° Lecat, 1949 % b.t. P 0 -10.0 1
57.65 68.79 73.85 75.13 75.54	262.4 13.5 158.6 32.4 120.5 51.9 110.0 75.0 106.4	76.45 16 80.42 9 84.42 9	05.2 - 03.1 - 08.0 - 02.6 -	35.6 +3 2.65 36.8 -5 1.89 39.0 -18 1 40.5 -35 0.46 100 -0.6 1
23,47 26,02 30,44 35,83 41,35 50,13 57,83 72,84	1181.0 - 1046.0 - 857.0 - 691.4 - 566.6 - 402.5 - 288.5 10.5 145.7 35.7	76.93 1. 77.10 1. 77.27 17 77.98 1. 80.39 16 84.39 16	26,5 52,5 17,4 67,4 15,4 - 14,5 - 12,4 - 17,0 - 06,4 -	Sulfur dioxide (SO ₂) + Isobutane (C ₄ H ₁₀) Lecat, 1949 b.t. P
54.47 72.96 76.35 77.10 77.53	281.0 5.4 159.2 23.7 133.4 30.9 127.4 32.4 126.8 33.3	77.88 12 80.32 1.	25,0 - 24,1 - 15,7 - 06,7 -	8 b.t. P 0 -10.0 1 Az 45.1 +3 3.17 " 100 -12.4 1
26.88 33.60 39.23 43.53 51.85 55.39 61.89	1034.0 - 781.7 - 644.3 - 542.9 - 406.4 - 353.3 - 268.7 8.4	76.40 14 77.30 15 78.01 15 78.40 12 78.82 12 80.40 12 84.39 1	43.9 32.4 32.8 34.8 30.7 38.7 27.7 - 27.1 - 21.4 - 10.0 -	Sulfur dioxide (SO_2) + Pentane (C_5H_{12}) Leslie, 1934
44.65 55.84 62.30 65.37 76.35 77.30 77.96	97 530.0 - 356.9 - 280.4 6.9 245.3 9.3 152.9 22.5 148.1 23.1 141.5 21.0	78.28 1: 78.56 1: 78.62 1: 79.51 1: 81.07 1: 84.32 1:	39.4 17.4 38.5 13.5 35.5 - 30.4 - 27.1 - 16.0 -	mol% sat.t. mol% sat.t. 10 0 50 0 20 2.0 60 -4 30 2.0 70 -12 40 1.5 C.S.T. = 2°
53,58 64.51 67.10 76.45 78,02	398.3 264.3 1.2 245.0 4.2 163.1 9.6 153.5 6.0	78.36 15 78.86 14 79.67 14 81.13 13	2.6 3.3 9.0 - 4.8 - 7.0 - 4.7 -	

Sulfur dioxide ($S0_2$) + Hexane (C_6H_{14})

Bingham, 1907

 $C.S.T. = 14^{\circ}$

Timmermans and Kohnstamm, 1909-10

C.S.T. = 11.9 dt/dp (10-130 Kg) = +0.023

Seyer and Gill, 1924

%	sat.t.	%	sat.t.	
100.0 88.8 88.4 88.0 84.1 75.5 69.3 61,5	-93.7 -31.1 -29.8 -28.1 -19.1 -3.3 +3.1 7.0	41.0 32.4 18.5 11.75 7.3 5.3 3.3 1.0	+10.1 10.1 9.8 9.1 8.6 +7.2 -20.4 -61.3	
57.3	7.1			

Seyer and Todd, 1931

mo1%	sat.t.	mo1%	sat.t.	
82.1 72.5 70.0	-53 -22 -17	26.3 14.5 10.0	+10.8 9.8 6.5	
46.0 42.0 36.5 35.0	$^{+8}_{9.9}_{10.6}_{10.0}$	8.3 7.5 3.5 2.5	3.8 2.5 -10 -20	

C.S.T.: 28mo1%(34.3wt%) 2.26 atm. (P₁) 10.2°

Leslie, 1934

mol%	sat.t.	mo1%	sat.t.
10 20 30 40	10 12 11 10.5	50 60 70 80	10.2 10 9.75

Sulfur dioxide (SO_{2}) + 2-Methylpentane ($C_{6}H_{14}$)

Leslie, 1934

mo1%	sat.t.	mol%	sat.t.	
10 20 30 40	$egin{smallmatrix} 8 \\ 10 \\ 10 \\ 10 \end{bmatrix}$	50 60 70	10 3 -12	

C.S.T. : 10°

Sulfur dioxide (SO_2) + Heptane (C_7H_{16})

Leslie, 1934

mo1%	sat.t.	mol%	sat.t.	
10 20 30 40	19 19 19 19	59 60 70 80	19 18 9 -30	
C.S.T.	: 19°			

Sulfur dioxide (SO_2) + 2-Methylhexane (C_7H_{16})

Leslie, 1934

sat.t.	mo1%	sat.t.	
18	60	18	
18		10	
18	80		
18	90	_18	
18°			
	18 18 18 18	18 60 18 70 18 80 18 90	18 60 18 18 70 10 18 80 -2 18 90 -18

Sulfur dioxide (SO_2) + Octane (C_8H_{18})

Seyer and Todd, 1931

C.S.T.: 24mol%(36wt%) 4.07 atm.(P₁) 26.9°

Leslie, 1934

mol %	sat.t.	mol %	sat,t.
10	24	50	25
20	24.5	60	15
30	24.5	70	- 2
40	2 5	80	-15
C.S.T. =	25.5°		

Sulfur dioxide ($S0_2$) + 2-Methylheptane (C_8H_{18}	Sulfur	ptane (C ₈ H ₁₈)	+ 2-Methylheptane	+)	S0 2	(dioxide	Sulfur
---	--------	---	-------------------	---	---	------	---	---------	--------

Les	lia	1934
Les	ne.	19.14

101%	sat.t.	mo 1%	sat.t.
10	24	50	24
20	24	60	20
10 20 30	24	7 0	2
40	24		

C.S.T. : 24°

Sulfur dioxide (SO_2) + Nonane (C_9H_{20})

Leslie, 1934

10 32 50 28 20 32 60 23 30 31,75 70 0	mol %	co+ +		
10 32 50 28 20 32 60 23 30 31.75 70 0	1101 %	sat.t.	mol %	sat.t.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10	32	50	28
30 31.75 70 0	20		60	23
	30 40	31.75 31	70	0
	C.S.T. =	: 32°		

Sulfur dioxide ($S0_{2}$) + Decane ($C_{1\,0}H_{\text{R2}}$)

Bingham, 1907

C.S.T. = 32°

Seyer and Todd, 1931

mo 1%	sat.t.	mo1%	sat.t.
86.7 70.2 65.0 60.0 49.5 45.4 26.2	-23 0.0 7.5 14.1 26.0 29.0 37.0	18.7 17.3 7.0 6.5 5.91	37.3 37.2 34.4 33.8 32.8
C.S.T.:	17 mo1%(31.15	wt%)	5,61 atm.(P ₁) 37,3°

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mol%	sat.t.	mo1%	sat.t.
10	3 7	50	22
20	3 7 3 7 36	60	7 0
30	36	7 0	- 10
40	35,5		
C.S.T.	36.5°		

Sulfur dioxide (SO_2) + Isodecane ($C_{10}H_{22}$)

Timmermans and Kohnstamm, 1909-10

C.S.T. = 34.1 dt/dp (10-130 Kg) = +0.03

Sulfur dioxide (SO_2) + Undecane ($C_{11}H_{24}$)

Leslie, 1934

mol%	sat.t.	
10	42	
20	42	
10 20 30 40 50	42	
40	40 27	
50	27	
C.S.T.: 42°		

Sulfur dioxide (SO_2) + Dodecane ($C_{12}H_{26}$)

Seyer and Todd, 1931

mo 1%	sat.t.	mo 1%	sat.t.	
74.3 60.8 45.7 49.4 35.0 29.5	-1.0 14.5 31.1 36.0 40.3 41.6	24.8 19.6 12.2 8.2 5.0 2,2	44.0 45.3 47.3 46.4 41.8 30.2	
C.S.T.:	14 mo1%	7.53 atm.(P ₁)	47.3°	

Leslie, 1934

mo1%	sat.t.	mo 1%	sat.t.	
10 20 30 40	47 44 41 38	50 60 7 0	32 26 13	

C.S.T.: 47°

Sulfur dioxide (SO_2) + Tetradecane ($C_{14}H_{30}$)

Zerner, Weisz and Opalski, 1922

%	sat.t.	%	s	at.t.	
0.43 1.20 2.36 3.52 6.03	+17.5 30 34.75 44	11.38 63.77 71.86 81.76 94.82	above	56 56 45.75 34.75	

Seyer and Todd, 1931

mo 1%	sat.t.	mo 1%	sat.t.	
0.4 0.6 2.3 5.2 5.7 9.0 10.1 14.0	11.5 21.6 44.7 52.7 53.7 55.1 55.3 55.5	15 22.6 39.6 46 57.5 62.6 98.2	55.4 53.4 40.5 33.7 26.0 16.9 2.6	

C.S.T.: 11 mo1% 9.38 atm.(P₁) 55.5°

Sulfur dioxide (SO_2) + Dotriacontane ($C_{32}H_{66}$)

Seyer and Todd, 1931

mo 1%	f.t.	mo1%	sat.t.	
17.1 22.2 43.3 43.6	60.1 63.1 64.5 64.3	0.2 0.9 1.2 1.7 2.6 5.3 5.4	75 103.5 103.3 108 110 104 101 79	
C.S.T.:	2.6 mo1%	34 atm.(P ₁)	110°	

Sulfur dioxide ($S0_2$) (b.t. = -10.0°) + Hydrocarbons

Lecat, 1949

	2 nd comp.		Λz		
Name	Formula	b.t.	%	b.t.	P
Butene-1	(C ₁₄ H ₈)	-6 <u>.</u> 7	41.7 40.7	-16 +3	1 2.37
Butene-2	(C ₄ H ₈)	+1	31.6	-14	1
trans		-	32.5	-29	0.46
Butene-2	(C4H8)	+3.7	31.5	-13	1
as.		-	27.7	+3	2.05
Isobutene	(C ₄ H ₈)	-6.7	46.0	-30	0.46
		-	44.2	-14	1
		-	46.0	0	1.88
		-	36.0	+3	2.24

Sulfur diexide (SO_2) + Caprylene (C_8H_{16})

Seyer and Hodnett, 1936

mo1%	sat.t.	f.t.	mo 1%	sat.t.	f.t.
0.0 0.50 0.69 1.12 2.61 3.87	-62.7 -62.7 -63.0 -631.0	-75.4 75.8 76.2 75.6	26.98 30.38 36.20 38.19 48.76 58.39	-17.0 17.8 20.0 25.2 32.8 -47.1	-75.8 -75.8 -76.0
5.78 8.87 12.83 16.14 19.21 19.73 23.65 23.99	25.6 20.5 17.3 16.9 16.4 16.7 16.8	75.8 75.6 75.6 75.8 -76.0	69.37 81.19 84.02 85.32 87.35 96.29 99.798 100.00	-	75.8 88.4 89.5 93.2 97.7 105.6 105.4 -105.2

Sulfur dioxide (SO_2) + Cetene ($C_{16}H_{32}$)

Seyer and Hugget, 1924

%	sat.t.	%	sat.t.	
100.00 79.23 69.16 61.90 53.42 50.19	+3.5 9.5 20.5 28.1 34.8 38.4	44.73 35.13 17.40 6.64 3.97	42.5 42.7 42.6 32.1 24.0	

30LFUR DIDAIDE + ME	ETHTLCTCLOPENTANE
Sulfur dioxide (SO_2) + Methylcyclopentane (C_6H_{12})	Sulfur dioxide (SO_2) + Methylcyclohexane (C_7H_{14})
Leslie, 1934 (fig.)	Leslie, 1934 (fig.)
mol% sat.t. mol% sat.t.	mol% sat.t. mol% sat.t.
10 18 40 18 20 18 50 18 30 18 60 2	10 16 50 15 20 16 60 14 30 15 70 7 40 15 80 -8
Sulfur dioxide (SO ₂) + Cyclohexane (C ₆ H _{1,2}) Seyer and Dunbar, 1922 % f.t. % sat.t. 98 -4.2 82 -1.0 96 -17.0 78 +1.5 82 -17.0 64.9 11.0 3.3 -24.2 59.1 11.3 2.5 -34.2 40.8 13.5 1.0 -56.0 34.6 13.3 0.8 -60.0 16.8 8.8 0.5 -64.5 12.1 4.1 7.8 -6.0 6.0 -8.3	C.S.T.: 15° Francis, 1944 C.S.T.: 16° Sulfur dioxide (SO ₂) + Ethylcyclohexane(C ₈ H ₁₆) Leslie, 1934 (fig.) mol% sat.t. mol% sat.t. 10 24 50 24 20 25 60 21 30 25 70 10
Leslie, 1934 (fig.) mol% sat.t. mol% sat.t.	C.S.T.: 25°
10 12 50 12 20 12 60 12 30 12 70 4 40 12 C.S.T.: 12°	Sulfur dioxide (${\bf SO}_2$) + Hexahydromesitylene (${\bf C_9H_{1B}}$)
Francis, 1944 C.S.T.: 13°	mol% sat.t. mol% sat.t. 10 29 50 30 20 30.5 60 29 30 30 70 16 40 30 C.S.T.: 30.5°

Sulfur dioxide ($S0_2$) + Cyclohexene (C_6H_{10})

Seyer and King, 1933

mo1%	f.t.	mo 1%	f.t.	
0	-75.43	66.9	-84.3	
1.80	75.9	76.7	89.7	
8.22	77.5	77.8	90.3	
12.8	77.8	80.5	93.9	
17.5	78.2	81.5	97.2	
20.0	78.5	87.3	103.4	
35.5	79.0	.87.7	106.7	
42.7	79.6	89.5	110.1	
44.6	79.9	93.5	107.1	
53.6 5 7. 9	81.7 -82.2	$\substack{95.7\\100.0}$	106.5 -103.9	

Sulfur dioxide ($S0_{\,\text{2}}\text{)}$ + Decaline ($C_{1\,\text{0}}H_{1\,\text{8}}$)

Zerner, Weisz and Opalski, 1922

	sat.t.	%	sat.t.	
1.62	-14.5	13.80	38	
2.86	+0.5	27.34	5 0.7 5	
5.53	18	52.48	51.50	
9.72	28.5	81.39	22.25	

Seyer and Cornett, 1937

mo1%	f.t.	sat.t.	mo1%	f.t.	sat.t.
100.0	-35.5	.7	29.77	-39.9	41.35
91.23 79.07	37.5 37.3	$-14.90 \\ 3.95$	22.28 13.42	40.4 40.9	$41.80 \\ 41.65$
64.96	38.3	25.20	9.22	41,1	39.95
55.30 48.33	$\frac{38.4}{37.9}$	$\frac{32.60}{35.50}$	4.85 3.63	$\frac{41.3}{41.9}$	26.80 22.40
39.37	-39.6	41.40	0.00	-75.4	-

Francis, 1944

C.S.T.: 42°

Sulfur dioxide ($S0_2$) + Tetraline ($C_{\uparrow 0}H_{12}$)

Zerner, Weisz and Opalski, 1922

Я	sat.t.	%	sat.t.
9.1 19.1 47.3	-14.5 - 0.5 +22.5	48.9 70.0	+22.0 +18.5

De Carli, 1926

%	f.t.	Е	%	f.t.	E
100.00 93.40 92.30 87.90 82.40 77.80 77.40 70.50 67.40 66.60 61.00 60.80 55.60 55.40 52.50	-36.3 42.3 45.3 53.3 61.8 64.3 61.2 60.5 58.5 58.5 60.9 61.2	-64.0 64.5 64.3 64.0 -64.0	50.80 48.23 47.30 45.30 44.00 42.80 40.60 39.00 37.80 32.00 29.60 28.20 26.20 24.20 22.12 19.5.70	f.t. -66.2 67.5 69.0 72.3 70.5 70.0 70.7 71.6 73.6 73.5 75.0 75.0 74.0 75.0 74.5 73.6	
51.60 51.50	$^{67.2}_{-66.8}$	-	8.30	73.0 -72.3	-
()	l+1)	(2+1)	(3+1)		

Sulfur dioxide (SO_2) + Benzene (C_6H_6)

Mazzetti and De Carli, 1926

%	f.t.	E	%	f.t.	E
100.0	5.6	-	36.31	_40	
87,64	0 -0.3	-	33.27	-43	-64
87.00 86.82	-0.5	_	33.14	-42	-61
80.64	-4	_ 3 4	31.68	-47	-62
76.9 3	-9		31.02	-4 8	-62
76.34	-9.5	_	30.19	-58	-
73.26	-13	_	29.94	-59	-64
69,00	-17.5	- 30	29.08	-56.5	~
64.80	-18.5	- 30	28.24	-54	_
62,52	-22.4	-	27.02	_ 52. 3	-70
57.44	-2 9	.=	25.22	-54	- <u>74</u>
57.03	~23	- 3 2	23.40	-54.8	-74
56.97	- 24	- 32	19.91	-59	-
55.04	-18	-	16.68	-64 -68	-
53,20	- 15	-49	15.00 13.20	-0 8 -73	- 7 9
51.95	- 18	-52	11.75	-76.5	-79 -78.4
47.93 45.00	- 25 - 30	_55	10.87	-77.5	-78.5
42.91	-38	-52	10.12	-77.7	-79
41.31	-45	-55	8.3 6	-7 5	-7 8
39.83	-52	200	7.06	-75. 5	-7 9
38.02	-44	₋₅₂	5,12	-7 3	_80
55,62			0.0	-72.5	_
(1+1)	(2+1)	(3+1)			

Seyer and Peck, 1930	Lewis, 1925
\$ f.1,	% n % n
0 -75.43 5.5 -77.4 22.0 -61.1 46.0 -41.0 62.6 -26.5 77.7 -13.6 100.0 +5.4	25° 100 594.3 50.44 376.5 80.76 490.8 26.39 303.2 52.58 379.8 0 255.9
Lewis, 1925	Seyer and Peck, 1930
% d %	d t o t o
25° 100.00 0.8714 51.67 80.76 .9370 50.44 74.17 .9627 26.79 57.18 1.0351 26.39 52.58 .0570 0.00	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Seyer and Peck, 1930	80 18.75 60 19.73 70 18.29 80 16.95
t -d % d	46.01% 22.07%
77.7% -10	625 0 27.84 -30 33.19 191 10 26.04 -20 31.38 188 20 24.42 -10 29.53 221 30 22.90 0 27.57 188 40 21.39 10 25.78 194 50 19.79 20 23.88 30 60 18.26 30 22.06 37 70 16.84 40 20.31 38 60 16.76 38 60 16.76 33 70 14.95 80 13.23
-20 .1044 -50 .20 -10 .0897 -40 .20	812 630 668 813 449 662 784 60 11 12 13 13 13

Sulfur dioxide (SO_2) + Toluene (C_7H_8)	Sulfur dioxide (SO_2) + Ethylbenzene (C_8H_{10})
Lloyd, 1908	De Carli, 1926
t c* t c*	% f.t. E % f.t. E
760 mm 20 21.75 40 9.36 25 17.04 50 7.72 30 12.44 60 5.47 *c = g SO ₂ in 100 cc	100.00 -93.0 - 45.50 -79.8 - 79.00 108.0 - 44.94 78.5 - 75.16 109.5 - 44.00 80.0 -82.5 70.70 104.5 - 43.25 82.2 - 67.47 101.0 - 41.00 81.8 82.0 65.93 96.0 - 39.50 81.0 82.5 63.08 91.8 - 36.60 79.7 82.0 62.01 91.0 - 31.60 78.7 82.0 62.01 91.0 - 31.60 78.7 82.0 61.20 91.2 - 30.32 78.2 82.2
Zerner, Weisz and Opalski, 1922	
% sat.t. % sat.t.	59.20 92.8 93.4 25.90 77.1 82.2
7,05 -25 65,44 21 27,93 +7 75,79 21 45,50 13,5 78,36 17	\$8.50 90.0 93.0 23.35 76.8 -82.2 56.17 88.5 93.0 21.30 76.4 - 55.45 88.0 93.0 18.87 76.0 - 55.04 87.0 87.0 16.90 75.5 - 53.71 83.2 83.2 12.30 75.0 - 50.61 81.8 81.8 8.80 74.2 - 49.20 80.0 80.0 0.00 -72.3 - 47.70 -79.6 -79.6 (1+1) (2+1)
De Carli, 19 2 6	
% f.t. E % f.t.	
55.21 -96 -102 32.10 -80.5 50.67 93 -102 29.50 81.4 46.92 89.9 -102 28.29 80.7 43.52 88.2 -101 27.10 80.4 41.50 85.8 - 25.85 79.6 40.64 85.5 - 25.00 79.4 39.40 85.6 - 23.35 79.0 39.00 85.7 - 19.60 78.5 38.13 85.9 - 17.50 77.7 37.80 85.0 - 15.80 77.0 36.70 83.5 - 13.22 76.5 35.50 82.0 - 8.50 74.8 35.00 81.5 - 4.20 73.5 33.00 -81.0 - 0 -72.5	Sulfur dioxide (SO ₂) + o-Xylene (C _B H ₁₀) Seyer, Martin and Hodnett, 1937 mol% f.t. mol% f.t. 100.00 -27.1 38.67 -53.0 92.12 31.0 27.89 60.0 92.27 31.2 17.42 66.1 83.87 34.4 10.13 72.0 79.73 36.5 8.50 72.7 77.92 36.8 3.00 77.0 62.61 41.2 2.30 78.1 57.33 44.3 1.61 78.3
	51.56 47.5 1.18 78.7 41.31 -51.4 0.55 -76.4
Lewis, 1925	
% d % d	
25° 100.00	Sulfur dioxide (SO ₂) + m-Xylene (C _B H ₁₀) Seyer, Martin and Hodnett, 1937
% n % n	mol% f.t. mol% f.t.
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	100.00

Sulfur dioxide (SO_2) + p-Xylene (C_gH_{10})	Locket, 1932
	mo1%dn
Seyer, Martin and Hodnett, 1937	25∘
mol% f.t. mol% f.t.	100 0.8611 651.8
100,00 +13,2 42,48 -26,3 88,14 +8,9 38,64 29,3	86.3 .8841 638.1 77.7 .9026 606.2 74.5 .8122 592.6
86.19 +6.9 36.07 34.1 85.80 +4.8 28.93 41.4 83.73 +4.3 19.30 51.2 75.33 +0.8 15.30 57.6 73.29 -1.1 10.10 64.2 66.01 -6.1 1.10 76.8 55.25 -12.9 0.03 -75.9 50.01 -17.6	Sulfur dioxide (SO_2) + Cymene ($C_{10}H_{14}$)
	De Carli, 1926
Sulfur dioxide (SO_2) + Pseudocumene (C_9H_{12})	% f.t. E % f.t. E
De Carli, 1926	70.50 -93.2 - 47.80 -82.5 -84.0 69.00 90.0 - 47.10 82.2 84.0 67.26 89.0 - 44.73 81.3 84.0
% f.t. E % f.t. E	64,20 89.8 -91.2 43,45 80.8 80.5 62,50 92.0 92.0 39.94 78.8 84.0 59.68 89.4 92.0 35,57 78.1
100.00 -54.5 - 42.04 -74.0 -81.7 92.50 63.5 - 40.74 76.0 82.6 90.64 64.8 -71.0 36.00 77.4 82.0 86.23 71.0 -71.5 34.25 80.5 82.0 80.68 67.6 -71.0 31.86 82.0 82.0 76.35 65.5 -71.0 30.00 81.0 82.0 69.78 60.0 - 25.45 78.5 -82.0 64.81 61.0 - 21.50 77.4 - 60.53 62.2 - 15.00 75.0 - 56.95 64.5 - 9.25 74.2 - 53.50 67.2 - 5.00 73.0 -	59.68 89.4 92.0 35.57 78.1
50.40 68.4	
(1+1)	Sulfur dioxide (SO_2) + Diisopropylbenzene ($C_{12}H_{18}$)
Sulfur dioxide (SO_2) + Mesitylene (C_9H_{12})	Francis, 1944
	C.S.T. = below -7.8°
De Carli, 1926	
% f.t. E % f.t. E	Sulfur dioxide (SO_2) + Diamylbenzene ($C_{16}H_{26}$)
100 -56.8 - 51.62 -53.0 -76.0 94.70 66.8 -72.5 47.72 56.9 76.9 92.40 71.3 72.0 44.45 58.7 77.0 82.90 72.2 72.5 48.05 59.0 77.4	Francis, 1944
85.89 66.5 72.3 39.33 60.4 77.4 83.95 63.0 72.0 34.57 65.5 77.4	C.S.T. = -8°
80.23 59.5 72.2 29.88 66.2 77.3 77.65 54.5 72.5 25.86 68.5 77.4 75.15 50.5 71.3 23.22 70.0 77.3	
72.20 51.0 - 21.94 70.4 77.4	Sulfur dioxide (SO ₂) + Diphenyl (C ₁₂ H ₁₀)
8 65.26 49.4 - 9.92 76.5 77.0 8 63.31 49.8 - 8.42 75.3 77.0	Foote and Fleischer, 1934
61.15 50.5 - 6.56 75.0 77.3 60.96 51.2 - 0.00 -72.3	t p
56.15 -51.7 -75.5 (1+1)	sat. sol21.50 406 - 9.50 665 0.00 938

Sulfur dioxide (SO_2) + Triphenylmethane ($C_{19}H_{16}$)	Sulfur dioxide (SO ₂) + Methyl chloride (CH ₃ Cl)
Walden and Centnerszwer, 1902	Caubet, 1902
M D b.t. M D b.t.	tot.vol. * vol.liq. P tot. vol. vol.liq. P
	70.078%
.163 .151 .686 .612	123° 136,8°
.370 .371 .896 .846 .388 .383 .906 .862	18.311 - 27.2 14.080 - 34.6 16.901 - 29.0 12.669 - 37.5 15.490 - 30.9 11.259 - 40.4
	15.490 - 30.9 11.259 - 40.4 14.080 - 32.9 9.848 - 44.1 12.669 - 35.5 8.438 - 48.3
Sulfur dioxide (SO_2) + Naphthalene ($C_{10}H_8$)	11.259 - 38.0 7.028 - 52.5 9.848 - 40.9 5.617 - 57.1 8.438 - 44.7 5.476 dew point 57.8 7.874 dew point 46.3 4.912 0.215 58.0
Foote and Fleischer, 1934	7.025 0.130 70.3 4.200 0.000 30.3 50.3 50.3 50.3 50.3 50.3 5
sat.sol.	137.3°
-18.70 473 -8.50 740 0.00 1034	16,901
	* vol. are expressed in cc per l g. mixture
Sulfur dioxide (SO_2) + Nonanaphthalene ($C_{19}H_{26}$)	43.85% 95° 110°
Leslie, 1934	19.888 - 22.2 17.545 - 26.2
mol% sat.t. mol% sat.t.	18.716 - 23.4 16.375 - 27.4 17.545 - 24.4 15.203 - 29.0 16.375 - 25.6 14.031 - 30.7 15.203 - 26.8 12.860 - 32.6
	15.203 - 26.8 12.860 - 32.6 14.617 dew point 27.4 11.689 - 34.5
20 27 60 25	11.689 0.263 27.8 10.723 dew point 36.0 9.346 .468 28.4 9.346 0.175 36.4
40 27.5 80 8	4.661 .907 29.4 4.661 .849 37.2
C.S.T. = 27°	2.318 1.083 30.8 2.318 1.142 38.0 1.381 1.381 1.468 1.468 39.4
	123.6° 132° 17.546 - 27.6 11.689 - 38.4
Sulfur dioxide (SO_2) + Diisopropyl naphthalene ($C_{16}H_{20}$)	16.375 - 29.2 10.518 - 41.0 15.203 - 30.8 9.346 - 44.5 14.031 - 32.6 8.175 - 47.8 12.860 - 34.6 7.003 - 51.6 11.689 - 37.0 5.832 - 55.2
Francis, 1944	9.346 - 42.0 4.661 0.380 55.6 8.175 - 45.2 3.489 0.849 55.6
C.S.T. below : 78°	5.832 0.380 46.8 4.661 0.673 47.0
	2,054 1,200 47.4 1,556 1,556 48.5

SULFUR DIOXIDE + CARBON TETRACHLORIDE

138.8°	144.4°	
11.689 - 39.2 11.6 10.518 - 42.0 10.5 9.346 - 45.4 9.3 8.175 - 49.1 8.1 7.003 - 53.3 7.0	518 - 43.0 346 - 46.4 175 - 50.2	r dioxide ($\mathbf{S0}_{2}$) + Carbon tetrachloride ($\mathbf{CC1}_{4}$)
5 832 <u>- 57.6</u> 5.8	332 - 59.0 BUILL	and Beach, 1926
5.246 dew point59.6 4.6 3.489 0.439 60.6 3.4	489 0.380 65.2 II %	f.t. sat.t. % f.t. sat.t
2.903 1.054 60.9 2.9 2.025 1.644 61.1 2.8 1.820 1.820 61.2 2.0 146°(critical)	147.8°(homogen) 97.44	-26.78 - 59.19 - -29.27 30.58 - 49.93 - 29.68 34.90 - 42.66 - -44.63 - 31.66 - 35.20
5.832 - 59.6 7.0 4.661 - 64.4 5.8 4.192 dew point 64.6 4.6	089 ~ 41.2 II 88 44	- 39.80 28.36 - 37.20 - 34.90 16.44 47.2 - 33.57 15.31 47.5 - 13.33 50.9 - 29.80 8.42 57.9 - 29.37 5.24 66.1 -
dew point	bubble point Lewis	, 1925
t vol. P	t vol. P %	d % d
70,078%		25°
100 12.415 31.3 117 9.143 41.2 127 7.168 49.0 129 7.028 50.4 141.5 4.206 61.4	100 1.562 33.0 100.00 119 .738 44.7 127 .808 51.6 92.11 129 .844 51.8 141.5 2.332 64.5 87.48 144.5 2.442 66.2 85.01 73.28 68.93	3 .5743 51.85 .4491 .5532 48.60 .4435 .5490 35.79 .4183 .5367 27.76 .4055 .5276 26.42 .4035 .4931 0.00 .3667
135 5.866 54.8 140 5.116 60.8	123 1.682 49.0 135 .760 58.0 140 .903 63.4 145.5 2.260 67.0	η mol% η 25°
11	141 1,995 62.8 100 92.1	887.6 48.60 327.8 1 669.5 35.79 298.7 1 558.7 26.42 283.7
128.0 6.929 47.4 137.5 5.659 54.8	85.0 73.2 115.5 1.381 40.6 128.0 .481 48.5 137.5 .615 56.2	88 448.4 0.00 255.9
145.0 4.522 62.2	145 .782 63.4 150 .982 69.4	
20,73% 109 10,772 35.2	· · · · · · · · · · · · · · · · · · ·	dioxide (SO _R) + Propyl bromide (C _s H ₇ Br
122 7.727 44.5 137 5.651 55.0	122 .332 45.4	nd Rogers, 1939
143 4,516 61,3	137 .471 55.8 Cupp a 143 .582 61.3 146.5 .692 66.2	
II 151 3.436 69.0	151 .969 70.6 152 2.025 71.4	
153 retrograde 71.4 10.067%	100.00	25° 1.3430 37.17 1.3470 .3430 22.73 .3513
112.4 9.140 36.5 132 6.128 50.6	112.4 1.296 40.3 64.39	3436 6.49 3587
144.5 4.622 61.4	144.5 .547 64.7	,3436 0.00 .3680
	148 .610 67.2 155.5 2.488 74.2	n % n
4.390%	 	25°
136 5.568 55.5 149 3.941 68.2 152 3.281 70.8	123 1.274 47.8 100.00 136 .375 58.0 90.54 149 .579 69.5 72.00 152 .680 71.8 52.87 155.8 2.163 78.4 52.87	4 431.1 14.25 256.9 352.7 0.00 247.2

	Sulfur dioxide (SO ₂) + Methyl ether (C_2H_6O)
Sulfur dioxide (SO_2) + Isopropyl bromide ($C_3H_7\mathrm{Br}$)	
Cupp and Rogers, 1939	Baume, 1914 mol% f.t. mol% f.t.
% d % d	
25° 100.00 1.3060 36.71 1.3338 88.29 .3083 16.84 .3491 80.54 .3107 8.25 .3599 66.67 .3163 0.00 .3680 46.23 .3266	0 -72.3 45.1 -96.4 5.9 74.8 46.5 92.7 7.7 74.8 49.4 91.3 10.8 77.7 49.7 93.6 14.35 88.7 53.2 94.5 15.4 79.5 57.8 96.5 21.2 93.3 66.4 106.6 23.1 93.3 68.4 110.8 26.3 102.0 74.7 116.9
% n % n	26.3 102.0 74.7 116.9 27.8 107.2 75.8 117.5 29.4 102.6 76.7 121.3 32.7 106.6 80.6 123.4
25∘	32.7 106.6 80.6 123.4 32.8 110.3 80.6 124.2
100.00 443.8 49.72 287.0 86.21 378.9 34.76 266.4 78.28 349.9 17.32 255.5 63.87 313.3 0.00 247.2	35.1 105.9 83.0 126.9 35.7 106.4 85.2 132.6 37.1 103.4 87.5 135.6 37.9 101.5 88.2 142.3 40.0 101.2 90.3 145.0 41.1 97.4 93.3 141.2 43.7 93.9 96.6 139.7 45.0 -93.4 100.0 -138.5
Sulfur dioxide (${ m SO}_2$) + Butyl bromide (${ m C_4H_9Br}$)	Sulfur dioxide (SO_2) + Ether ($C_4H_{10}O$)
Cupp and Rogers, 1939	Lewis, 1925
% d % d	% d % d
25° 100.00 1.2689 47.13 1.3076 86.02 .2780 39.56 .3155 76.63 .2843 23.27 .3342 66.99 .2906 13.62 .3483 57.00 .2986 0.00 .3680	100 0.7084 38.83 1.0308 75.06 .8249 30.46 .0950 66.47 .8645 25.59 .1340 63.71 .8796 9.83 .2661 57.00 .9167 0 .3667 50.56 .9590
% n % n	% n % n
25°	25°
100.00 591.4 23.94 278.6 87.56 494.2 10.17 259.2 67.76 387.7 0.00 247.2 46.86 323.7	100 223.1 50.56 288.0 66.47 275.3 30.46 287.6 63.71 275.9 0.00 255.9 57.00 280.4
	Sulfur dioxide (SO_2) + Butyl ether ($C_8H_{18}O$)
	Hill and Fitzgerald, 1935
	c*p
	20° 0 11.0 6.256 332.4 1.528 87.5 7.920 413.5 3.082 170.5 9.524 483.5 4.582 250.1 * g SO ₂ absorbed in 100 cc

Sulfur dioxide (SO_2) + Anisole (C_7H_8O)	Sulf	ur dioxi	ide (S0	2) + Ca	ırbon dioxi	de (CO ₂)
Albertson and Fernelius, 1943 (fig.)	B1u	ncke, 18	88 and 1	889		
mol% f.t. mol% f.t.	8	-17°	P _15°	_10°	0°	
0.0	0 0.6 1.0 1.7 2.6 3.5 4.8 5.0	1.02 1.33	0.80 - 1.80 - 2.51	1.00 	1.53 1.83 2.02 2.32 2.80 3.20 3.82 3.93	
Sulfur dioxide (SO ₂) + Ethylene oxide(C ₂ H ₁ 0)	10.4 16.5 23.4 29.6	4.33 5.80 7.72 - +10°	- - - - - +20°	5.02 7.11 9.30 11.60 +30°	6.42 9.09 11.79 14.38	
Albertson and Fernelius, 1943 (fig.)	0.6	2.26 2.66	3. 24 3. 69	4.52 5.00	5.28 5.78	
mol% f.t. mol% f.t.	1.0	3. 15	4.20	5.63	6.44	
0 -75 44 -97.5 20 80 53 95 (1+1) 24 87.5 60 96.5	2.6 3.5 4.8 5.0	3.68 3.90 4.86 4.94	4.91 5.11 6.36	6.49 6.72 7.24	7.35 7.53 9.25	
24 87.5 60 96.5 26 93 66 98.5 31 98 70 102 32 107 78 105.5 33 101.5 83 110 37 115.5 86 112	10.4 16.5 23.4 29.6	8.61 11.48 14.75 18.35	11.08 14.21 18.40 22.96	13.77 17.73 22.74 28.93	15.46 19.61 25.06 30.71	
40 108 91 114.2 -102,5 100 -110,5	V*	47 v o]	1% 49	P vol%	69 vol%	71 vol%
				139)	
Sulfur dioxide (SO ₂) + Dioxane (C _Կ H ₆ O ₂)	19 20 21 22	47. 45. 40. 39.	0 0 0	- - -	- - -	- - -
Albertson and Fernelius, 1943 (fig.)	22 25 30 35 40	37. 34. 32.	0 2	-	45.0 42.3	-
mol% f.t. mol% f.t.	40 45 50	29. 28. 27.	8	_	40.5 39.5	~
0 -75 40 0 3 44 50 +2.5 (1+1)	60	25.	0	-	38.5 36.9	-
5 35 60 -0.1 6 30 70 -5	70 80 90	24. 23. 22.	7	_	35.6 34.4 33.4	
11 18 72 -9 E	100 120	21.	1	_ 2,3	32.5 -	32.7
20 -5 90 +5 30 0 (2+1) 100 12	150 200	18. 16. 15.	6 20 7 13	2.3 0.6 8.5	28.5 25.2	30.3 27.0
	250 300	15. 13.	9 1	5.4	22.5 20.1	24.2 21.8 18.2
	400 500 600	-	1	3.2 1.5 0.2	16.6	15.6 13.6
	700 800	-		9.2 8.4	-	12.1 11.1
	850 * v	- e fraci		8.1 normal v	- plume , 10	10.6)4
	,	1110			ame ; It	•
	JI					

			+ CARBON DIOXIDE				
340			84.32 %				
20 65.0 21 63.0 22 60.0 25 53.0 30 47.5 35 42.5 40 39.9 45 38.4 50 37.1 60 35.3 70 33.8			23.209 - 20.9 11.591 0.129 21.549 - 22.2 9.930 0.170 19.890 - 23.8 8.270 0.212 18.240 - 25.4 6.610 0.319 16.570 - 27.4 4.951 0.477 14.910 - 29.6 3.291 0.782 13.267 - 32.4 1.506 1.506	35.2 38.4 42.3 47.6 50.6 54.0 56.3			
80 32.5 90 31.3 100 30.1 120 - 31 150 25.9 28 200 22.7 25 250 20.0 22 300 17.9 20	- 49.1 - 47.5 - 45.8 8.8		36.4° 23.209 - 21.6 8.768 dew point 21.549 - 23.1 6.610 0.212 19.890 - 24.6 4.951 0.378 19.240 - 26.6 3.291 0.710 16.570 - 28.6 1.714 1.714 14.910 - 31.2 1.631 1:631 13.267 - 34.0 1.548 1.548 11.591 - 37.7 1.465 1.465 9.930 - 41.8	45.7 51.9 58.0 64.4 67.0 73.2 85.4 105.0			
800 - 10 850 - 10 50 77.0 60 66.0 70 60.5 80 56.7	4.8 - 18.7 3.1 - 16.9 1.7 - 14.6 0.8 - 13.0 0.5 - 12.2 76°		19.890	60.4 65.3 69.4 72.8 75.0 76.5 84.0 97.4 105.0			
90 53.0 100 50.4 150 42.4 170 - 200 38.0 250 32.4 300 28.5 400 - 500 - 600 - 700 -	75.0 - 75.0 - 46.0 - 42.1 48.5 - 37.2 40.9 - 33.1 35.4 - 27.4 27.9 - 23.3 - 20.1 - 17.7 - 15.7		F F	70.0 73.3 75.8 79.0 79.6 84.0 92.0			
Caubet, 1902 tot.vol.* vol.liq.	P tot.vol* vol.liq	. P	49.8° 14.910 - 33.0 3.706 0.207 13.267 - 36.2 3.291 0.332 11.591 - 39.8 2.876 0.456 9.930 - 45.0 2.668 0.581 8.270 - 50.8 2.544 0.498 6.610 - 58.8 2.466 dew point 5.034 dew point 67.4 2.129 - 4.537 0.132 70.2 1.880 - 4.121 0.166 72.4 1.714 -	74.4 76.5 79.0 79.4 80.6 80.7 84.0 90.0			
15.609 - 13.871 - 12.134 -	89.65 % 26° 27.0 8.658 dew poin 29.5 6.921 0.187 32.2 5.183 0.395 35.5 3.445 0.743 39.6 1.621 1.621	55.2 58.6	66.762 % 33.2°	102.4			
10.396 - 17.346 - 15.609 - 13.871 - 12.134 - 10.396 -	39.6 1.621 1.621 27.9 7.094 dew poin 30.4 5.183 0.204 33.4 4.314 0.309 37.0 3.445 0.569 41.2 1.881 1.881 46.9	61.4 t 54.2 61.6 64.6 67.1 69.4	13.152 0.165 29.2 1.356 1.356	31.0 33.2 35.6 38.2 41.4 45.0 48.8 53.3 56.6			
15.609 - 13.871 - 12.134 - 10.396 - 8.658 -	28.4 6.921 - 31.2 5.357 dew poin 34.0 4.314 0.187 37.8 3.445 0.395 42.4 2.576 0.960 48.2 2.055 2.055 39°(critical)	56.2 63.5 68.4 71.0 74.2 74.6	17.106 - 27.4 3.926 0.626	37.2 39.8 43.3 47.3 52.0 57.3			
10.396 - 6.658 - 6.921 -	42.6 3.880 0.134 49.0 2.224 2.224 56.6 2.055 2.055 69.4 1.881 1.881	73.4 75.8 79.0 82.6	14.470 - 30.8 1.455 1.455 14.207 dew point 31.2 1.402 1.402 13.152 0.099 32.6 1.382 1.382	64.0 69.5 79.0 93.0			

54.4° 19.742 - 25.3 7.880 0.165 47.9 18.424 - 26.8 6.562 0.217 52.3 17.106 - 28.4 5.244 0.296 57.6 15.788 - 30.4 3.926 0.461 64.5 14.470 - 32.6 2.608 0.843 72.4 13.152 - 35.0 1.613 1.613 77.8 11.834 - 37.8 1.579 1.579 87.8 10.516 - 40.8 1.487 1.487 98.8 10.187 dew point 41.6 1.455 1.455 105.0 7.198 0.086 44.2	70.4° 21.620 - 22.8 9.964 dew point 41.6 20.243 - 24.2 8.661 0.112 44.8 18.795 - 25.7 7.213 0.184 49.4 17.347 - 27.6 5.766 0.307 54.6 15.900 - 29.5 4.318 0.474 62.4 14.452 - 32.0 2.870 0.727 71.8 13.004 - 34.6 1.604 1.604 82.2 11.557 - 37.8 1.531 1.531 87.8 10.109 - 41.1 1.459 1.459 105.0
19.742 - 26.5 7.880 - 52.7 18.424 - 27.9 7.023 dew point 56.4 17.106 - 29.7 5.244 0.165 65.0 15.788 - 31.7 3.926 0.329 72.8 14.470 - 34.1 2.608 0.692 82.2 13.152 - 36.6 1.982 1.982 87.8 11.834 - 39.6 1.883 1.883 90.0 10.516 - 43.4 1.842 1.842 95.6 9.198 - 47.5 1.718 1.718 101.4	78.4° 18.795 - 26.6° 17.347 - 28.4° 5.766 0.184 60.0° 15.900 - 30.6° 4.318 0.300 68.4° 14.452 - 33.0° 13.004 - 36.0° 11.557 - 39.2° 1.691 1.691 95.6° 10.109 - 43.1° 1.467 1.467 105.0°
68°(critical) 13.152 - 37 5.244 0.131 67.1 11.834 - 40 3.926 0.276 75.0 10.516 - 43.9 2.608 0.560 84.9 9.198 - 48.2 2.147 2.147 88.6 7.880 - 53.3 1.949 1.949 92.0 6.562 - 59.5 1.784 1.784 98.8 6.167 dew point 61.8 1.685 1.685 105.0	83° 18.795 - 27.1 5.766 0.090 62.9 17.347 - 29.0 5.042 0.184 67.0 15.900 - 31.1 4.318 0.271 71.8 14.452 - 33.5 3.594 0.380 76.5 13.004 - 36.6 2.870 0.546 83.4 11.557 - 39.8 2.146 1.100 90.0 10.109 - 42.8 2.002 2.002 92.0 8.661 - 49.3 1.774 1.774 97.4 7.213 - 55.4 1.712 1.712 105.0
39.5 1.784 98.8 1.685 105.0 70°(retrograde) 13.152 - 37.5 3.926 0.164 77.0 11.834 - 40.4 3.267 0.250 83.4 10.516 - 44.4 2.608 0.428 87.8 9.198 - 49.0 2.410 0.263 89.6 7.880 - 54.2 2.377 dew point 90.0 6.562 - 61.0 2.278 - 90.8 5.738 dew point 66.2 2.081 - 93.4 5.244 0.066 69.4 1.949 - 96.4 4.585 0.105 73.2 1.784 - 105.0	86.0°(critical) 15.900 - 31.2 5.042 0.112 67.6 14.452 - 33.8 4.318 0.221 72.8 13.004 - 36.8 3.594 0.329 78.0 11.557 - 40.0 2.870 0.510 84.8 10.109 - 44.3 2.219 2.219 93.0 8.661 - 49.6 2.074 2.074 93.4 7.213 - 56.4 1.878
72°(retrograde) 13.152 - 38 3.926 0.099 79.3 11.834 - 40.8 3.267 0.164 84.8 10.516 - 44.9 2.793 0.184 87.8 9.198 - 49.4 2.608 0.199 89.6 7.880 - 55.0 2.509 dew point 89.8 6.562 - 61.8 2.114 - 95.6 5.244 dew point 70.0 1.949 - 99.3 4.585 0.066 74.5 1.842 - 105.0	5.910 dew point 63.5 1.777 1.777 105.0 88.0°(retrograde) 15.900 - 31.6 3.956 0.180 78.0 14.452 - 34.3 3.594 0.217 80.6 13.004 - 37.3 3.232 0.340 84.0 11.557 - 40.5 2.870 0.434 86.6 10.109 - 45.2 2.508 0.506 90.0 8.661 - 50.5 2.291 - 93.4 7.213 - 57.0 2.074 - 95.6
9.198 - 49.8 3.563 0.099 83.4 7.880 - 55.6 3.267 0.006 86.2 6.562 - 62.3 3.003 dew point 88.0 4.585 - 75.0 2.608 - 93.0 4.420 dew point 78.2 2.278 - 98.8 3.926 0.066 80.6 2.015 - 105.0	4.680 0.072 72.4 1.821 - 105.0 4.318 0.115 75.3 14.452 - 34.4 4.318 0.108 76.0 13.004 - 37.4 3.956 0.144 79.0 11.557 - 40.7 3.594 0.202 82.2 10.109 - 45.4 3.232 0.289 85.4
46.2° 21.690 - 20.8 11.557 0.257 29.6 20.967 - 21.4 10.109 0.300 31.8 20.315 dew point 21.8 8.661 0.351 34.6 18.795 0:076 22.8 7.213 0.401 38.0 17.347 0.090 23.8 5.766 0.459 41.5 15.900 0.112 24.9 4.318 0.619 46.5 14.452 0.155 26.2 2.870 0.800 52.7 13.004 0.199 27.8 1.314 1.314 59.6	11.557 - 41.0 3.051 0.180 86.0 10.109 - 45.7 2.870 0.217 88.4 8.661 - 51.2 2.635 0.144 91.0 7.213 - 58.2 2.581 - 92.1 5.766 - 67.1 2.508 - 94.0
56.8° 21.690 - 21.5 11.557 0.112 33.4 20.243 - 22.9 10.109 0.184 36.0 18.795 - 24.3 8.661 0.221 38.9 17:347 - 25.9 7:213 0.329 42.6 15.900 - 27.7 5.766 0.401 45.3 14.452 - 29.7 4.318 0.510 53.3 14.090 dew point 30.2 2.870 0.763 61.0 13.004 0.076 31.4 1.495 1.495 68.9	4.499 dew point 75.1 2.327 - 96.5 3.956 0.130 79.8 2.146 - 101.0 3.594 0.144

40.03	<u>·</u>	· i	17.109 15.681	=	30.2 32.4	4.258	dew point 0.153	76.6
19.965 - 22.8 18.537 - 24.2 17.109 - 25.8 15.253 dew point 28.4 14.253 0.082 28.8	8.542 0.310 7.114 0.396 5.686 0.503 4.258 0.610 2.830 0.860	37.0 40.0 44.5 50.0 57.4	14.253 12.825 11.398 9.970 8.542	- - - -	35.0 38.0 41.7 46.3 51.6	3.902 3.545 2.830 2.509 2.245	0.181 0.203 0.324 2.509 2.245	80.6 83.4 91.0 94.2 98.8
12.825 0.146 30.4 11.398 0.181 32.2 9.970 0.224 34.3	1.367 1.296 1.260 1.260	68.1 79.6 98.8	7.114 5.686	=	58.6 66.4	1,903 etrograde		105.0
70.8' 18.537 - 24.5 17.109 - 26.3 15.681 - 28.0 14.253 - 29.6 13.682 dew point 30.8 12.825 0.110 32.0 11.398 0.146 33.4	9.970 0.181 8.542 0.253 7.114 0.360 5.686 0.467 4.258 0.574 2.830 0.752 1.402 1.402	35.0 38.0 41.3 45.8 51.6 59.0 70.0	14.253 12.825 11.398 9.970 8.542 7.114 5.686 4.258	-	35.2 38.4 42.0 46.8 52.1 59.6 68.4 78.4	3.188 2.830 2.688 2.464 2.117 2.009	dew point 0.114 0.157 0.071	79.5 84.8 87.8 92.0 93:1 96.6 102.4 105.0
18.537 - 25.3 17.109 - 27.0 15.681 - 28.8 14.253 - 31.2 12.825 - 33.5 11.526 dew point 35.8 9.970 0.146 38.0	8.542 0.196 7.114 0.289 5.686 0.403 4.258 0.567 2.830 0.824 1.453 1.453	40.4 45.0 49.8 55.5 63.4 76.0	14.253 12.825 11.398 9.970 8.542 7.114		35.3 38.5 42.1 46.9 52.2 59.7	5.686 3.545 3.188 2.830 2.464 2.117	dew point	69.0 85.8 89.6 94.0 97.6 103.4
18.537 - 25.7 17.109 - 27.4 15.681 - 29.6 14.253 - 31.8	7.114 0.231 5.686 0.338 4.258 0.538 2.830 0.752	47.0 51.8 58.8 69.0 81.4 95.6 105.0	29.074 %					
12.825 - 34.5 11.398 - 37.5 10.113 dew point 40.5 8.542 0.181 43.5	1.510 1.510 1.424 1.424 1.402 1.402		16.728	dew point 0.084 0.139 0.167	20.4 21.2 23.0 24.3	3.326 2.210	0.446 0.530 0.698 0.865	31.7 36.4 43.8 49.4
18.537 - 26.8 17.109 - 28.5 15.681 - 30.7 14.253 - 33.2 12.825 - 36.0	7.400 dew point 5.686 0.196 4.258 0.396 2.830 0.681 1.653 1.653	53.3 60.0 67.4 77.0 88.6	12.260 10.027 17.835 16.728	0.279	26.2 28.4 72 24.6 25.8	1,232 .5° 10,027	0.279	55.6 31.6
11.398 - 39.2 9.970 - 43.3 8.542 - 48.5	1.581 1.581 1.474 1.474	95.6 105.0	16.208 14.494 12.260	dew point 0.106 0.167	26.4 27.6 29.4	7.793 5.560 3.326 1.287	0.418 0.530 0.726 1.287	34.6 39.4 48.2 61.8
98° 17.109 - 29.2 15.681 - 31.3 14.253 - 33.9 12.825 - 36.8 11.398 - 40.0 9.970 - 44.5 8.542 - 49.6 7.114 - 55.9 6.114 dew point 61.4	5.686 0.110 4.972 0.181 4.258 0.324 3.545 0.467 2.830 0.646 2.117 1.030 1.831 1.831 1.760 1.760 1.617 1.617	63.4 67.0 70.4 75.8 81.8 88.4 92.0 97.0 105.0	16.728 15.611 14.494 13.378 12.707 11.144 10.027 8.910	dew point 0.117 0.195 0.296	81 26.6 28.2 29.8 31.8 32.4 33.5 34.6 36.0	7.793 6.677 5.560 4.443 3.326 2.210 1.311	0.363 0.418 0.502 0.586 0.698 0.865 1.311	38.0 40.8 44.4 48.6 53.6 61.5 68.6
17.109 - 29.4 15.681 - 31.7 14.253 - 34.2 12.825 - 37.2 11.423 - 40.2 9.970 - 45.0 8.542 - 50.2 7.114 - 56.6	4.258 0.203 3.545 0.324 2.830 0.538 2.464 0.717 2.295 0.753 2.188 2.118 2.117 2.117 1.964 1.964	73.0 79.4 86.0 89.6 91.0 93.4 93.8 96.4	16.728 15.611 14.494 13.378 12.260 11.144 10.139 8.910	- - - - dew point 0.128	27.4 29.0 30.8 32.6 34.8 37.4 39.4 41.5	7.793 6.677 5.560 4.443 3.326 2.210 1.372	0.195 0.307 0.390 0.502 0.698 0.865 1.372	43.8 46.6 49.9 54.4 59.5 67.0 77.0
5.686 - 65.0 5.436 dew point 66.6 4.972 0.110 69.4	1,903 1,903 1,760 1,760	98.8 105.0	15.611 14.494 13.378 12.260 11.144 10.027 8.910 7.793 7.514	- - - - - - dew point	30.4 32.1 34.6 37.0 39.4 42.5 46.0 50.0 51.2	6.677 5.560 4.443 3.326 2.210 1.511 1.455 1.372 1.368		53.3 57.6 62.8 68.4 78.4 84.0 89.8 101.0

13.378 - 35.6 4.443 12.260 - 38.0 3.326 11.144 - 40.7 2.210 10.027 - 44.2 1.762 8.910 - 47.8 1.650 7.793 - 52.2 1.567 6.677 - 57.3 1.539 119.5°(critical		18.317 - 26.6 5.348 dew point 62.8 17.007 - 28.3 3.907 0.330 69.0 15.697 - 30.3 3.252 0.494 72.2 14.387 - 32.6 2.597 0.756 77.0 13.077 - 34.9 1.942 1.280 82.2 11.767 - 37.9 1.680 1.680 84.8 10.457 - 41.2 1.614 1.614 88.0 9.147 - 45.4 1.549 1.549 91.0 7.837 - 50.2 1.447 1.447 105.0 6.627 - 55.8
10.027 - 45.2 3.885 8.910 - 49.0 3.326 7.793 - 53.6 2.768 6.677 - 58.8 2.489 5.560 - 66.0 2.137 4.443 - 72.8 1.595 4.331 dew point 73.4 120.6° (retrograde 14.494 - 34.0 4.443		132°(critical) 18.317 - 27.2 6,627 - 58.6 17.007 - 29.0 5.217 - 66.6 15.697 - 30.9 3.907 dew point 75.8 14.387 - 33.3 3.252 0.180 79.4 13.077 - 35.8 2.597 0.494 84.0 11.767 - 38.8 2.204 2.204 86.6 10.457 - 42.4 1.942 1.942 89.8 9.147 - 46.8 1.680 1.680 98.8
13.378 - 36.4 3.885 12.260 - 38.8 3.326 11.144 - 41.8 2.768	- 75.0 dew point 79.2 0.139 83.4 0.307 86.2 - 91.4 - 95.0 - 102.4 - 105.1	7.8371 - 52.2 1.614 1.614 105.0 133.6° (retrograde) 13.077 - 36.0 3.252 0.066 80.0 11.767 - 39.0 2.597 0.262 84.0 10.457 - 42.6 2.531 0.131 84.8 9.147 - 47.0 2.466 - 86.0 7.837 - 52.4 2.269 - 88.6 6.627 - 59.2 1.942 - 93.0 5.217 - 67.4 1.778 - 98.8 3.907 - 76.4 1.647 - 105.0 3.579 - 79.4
19.627 - 21.0 9.147 19.102 dew point 21.4 6.627 17.007 0.102 21.9 3.907 14.387 0.173 23.0 2.597 11.767 0.298 24.2 1.123	0.376 26.4 0.540 29.6 0.701 35.5 0.822 39.6 1.123 48.8	8.905,≰ 81°
19.627 - 21.7 10.457 18.317 - 22.8 7.837 17.007 - 24.1 5.217 15.303 dew point 25.5 3.907 14.387 0.102 26.2 2.597 13.077 0.154 27.0 1.221	0.271 29.2 0.396 32.0 0.560 36.6 0.701 40.4 0.822 45.7 1.221 54.5	183401 dew point 21.4 5.317 0.640 28.3 15.997 0.079 22.1 4.249 0.693 29.8 13.861 0.164 22.6 3.181 0.773 32.0 11.727 0.293 23.4 2.113 0.853 34.6 9.589 0.431 24.6 1.125 1.125 40.4 7.453 0.506 25.8
19.627 - 22.8 6.627 18.317 - 23.8 5.217 17.007 - 25.2 3.907 15.697 - 27.0 2.597 13.077 - 30.8 1.319 11.767 - 33.9 1.287 10.85 dew point 34.6 1.241 9.147 0.167 36.4 1.221 7.837 0.271 37.8	0.370 39.7 0.560 41.8 0.658 45.8 0.822 52.5 1.319 63.2 1.287 71.8 1.241 87.8 1.221 105.0	19,202 - 22.0 10.657 0.223 28.7 18.134 - 22.9 8.521 0.346 30.0 17.066 - 24.0 6.385 0.506 31.8 15.997 - 25.3 4.249 0.656 34.7 14.930 - 26.4 3.181 0.800 37.2 13.728 dew point 27.7 2.113 0.853 40.4 12.794 0.079 28.0 1.178 1.178 46.5
19.627 23.7 8.884 18.317 - 25.0 7.837 17.007 - 26.6 6.627 15.697 - 28.4 5.217 14.387 - 30.4 3.907 13.077 - 32.6 2.597 11.767 - 35.0 1.385 10.457 - 38.2 1.333 9.147 - 41.4 1.287	dew point 42.0 0.140 43.7 0.271 46.0 0.429 49.4 0.592 53.3 0.854 59.6 1.385 70.2 1.333 86.0 1.287 100.0	102° 17.066 - 24.8 7.453 0.319 35.4 15.997 - 26.3 5.317 0.560 37.5 14.930 - 27.7 4.249 0.656 39.4 13.861 - 29.0 3.181 0.773 41.4 12.793 - 30.6 2.113 0.880 45.4 11.727 - 32.7 1.216 1.216 52.2 10.978 dew point 33.8 1.152 1.152 70.0 9.589 0.132 34.4 1.141 1.141 87.8 8.521 0.239 34.8
19.627 - 24.3 7.837 18.317 - 25.8 7.050 17.007 - 27.8 5.217 15.697 - 29.3 3.907 14.387 - 31.4 2.597 13.077 - 33.6 1.418 11.767 - 36.4 1.391 10.457 - 39.4 1.365 9.147 - 43.2	dew point 51.2 0.298 55.5 0.527 60.6 0.822 68.4 1.418 77.4 1.391 87.8 1.365 105.0	15.997 - 28.4 6.812 dew point 50.8 14.930 - 30.2 5.317 0.266 53.2 13.861 - 31.8 4.249 0.453 57.8 12.793 - 33.8 3.181 0.693 59.0 11.727 - 36.1 2.113 0.933 63.4 10.657 - 38.5 1.365 1.365 69.0 9.589 - 41.8 1.339 1.339 79.0 8.521 - 44.8 1.312 1.312 85.0

15.997 14.930 13.861 12.793 11.727 10.657 9.589 8.521 7.453 6.385	-	29.4 31.1 32.9 35.0 37.4 39.8 43.0 46.6 50.7 55.2	5.317 4.943 4.249 3.181 2.647 2.113 1.483 1.365 1.328	dew poir 0.212 0.560 0.720 0.960 1.483 1.365 1.328	60.6 62.3 64.6 67.4 69.5 71.4 75.2 89.8 105.0	Thiel and Schulte, 1920 mol% p t L V 33.6 99.72 750 -78.633
13.861 12.793 11.727 10.657 9.589 8.524 7.453 6.385	-	34.0 36.3 38.8 41.8 45.4 49.0 53.2 58.0	4.249 3.715 3.181 2.647 2.166 1.846 1.579 1.526	dew poir 0.159 0.399 2.166 1.846 1.579 1.526	71.4 74.5 75.8 79.0 80.6 84.8 93.0 98.8	Blumcke, 1888 and 1889
	dew point mes are in		2.162 g. mixt	2.162 ure .	81.4	20 1.363 1.281 30 1.314 1.232 40 1.262 - 50 1.212 - 100 0.927 0.543
de	w point		bub	ble point	:	100 0,919 0,556
t	vol.	P	t	vol.	P	
22 33 41.2 38.2 50 59	14.910 10.428 7.606 18.556 11.834 8.704 28.060 12.633	28. 7 40. 4 51. 2 66. 7 48. 2 52. 8 18. 4 35. 2	22 32.4 40.8 762\$ 38.4 50.4 60 22.6 31.4 41.0 52.6	1.491 .660 .764 1.422 .579 .751 1.205 .220 .321 .386	50.9 61.8 71.9 59.5 73.3 84.0 39.5 47.0 54.6 65.0 75.0	Yung and Schmick, 1930
85	9.113		63.5 03% 33.2 45 60.6 85 074% 29.2 38.0 50.6 519%	1. 224 . 260 . 331 . 567 1. 120 . 132 . 204	75.0 42.6 51.6 62.6 84.0 33.7 39.7 47.0	
113	8, 361	42.0	29 41 49 60 905\$ 47 61 70.5	1.058 .084 .104 .123 1.045 .072 .098 .275	27.4 32.7 36.5 42.4 26.7 31.8 35.5 62.8	

Sulfur dioxide (SO_2) + Acetone (C_3H_60)	
Albertson and Fernelius, 1943	Ishikawa, Mitsui and Murooka, 1934 - 1935
mol% f.t, mol% f.t. 0 -75 59 -96	cc SO ₂ p cc SO ₂ p per 2 g per 2 g camphor
15 85 62 101 18 87.5 70 115	camphor camphor
25 97.5 71 117 28 102 E 73 119 E 30 99 76 114 32 95 80 110 35 92 82 105 39 89 90 100 42 85 94 97 50 82.1 (1+1) 100 -95 52 85 56 -91	16.5 568.5 149.4 574.1 30.9 569.5 162.1 615.4 51.2 571.2 169.0 645.4 70.5 571.6 177.0 680.8 90.4 572.4 182.6 704.4 109.5 572.7 193.2 750.3 129.1 573.3 203.5 794.8
	14.9 408.3 192.9 508.8 34.0 408.6 202.4 538.8 53.0 409.9 213.3 572.6
Lewis, 1925 % d % d	l 76.4 410.5 223.2 603.4
% d % d	97.9 411.0 231.0 627.1 132.6 411.8 237.8 648.2 145.2 412.4 265.1 728.8 162.9 416.8 273.8 754.8
100,00 0.7850 37,93 1.0886 75,26 .8885 21.05 ,1994	162.9 416.8 273.8 754.8 179.2 467.0
69.40 9129 20.80 .2052 47.83 1.0132 12.32 .2690 47.58 .0313 8.65 .2950	
44.90 :0410 0:00 :3667	40.4 282.6 282.9 527.3 60.0 282.2 300.1 561.4
% n % n	1 100.1 283.2 331.6 622.7
100 304.0 21.05 301.6 75.26 343.0 8.65 284.0 47.58 341.0 0 255.9 37.93 340.4	121.9 283.4 345.5 648.8 145.4 284.1 357.3 669.2 168.8 287.2 365.1 683.9 193.8 340.2 371.4 695.5 211.6 377.2 378.8 709.1 222.0 399.2 390.7 729.1 235.9 428.9 399.9 745.0 252.4 463.7
	0° 7.3 183.9 237.3 273:4
Sulfur dioxide (SO_2) + Camphor ($C_{10}H_{16}O$)	20.8 184.7 255.6 294.3 46.3 185.1 269.5 311.0
Bellucci and Grassi, 1913	1 87.7 186.2 302.8 353.6
% f.t. % f.t.	133.0 186.5 329.6 390.2 155.1 187.1 345.5 410.2
0 -76 55.17 -46 3.34 77 55.56 45 6.47 77.5 56.60 44 9.40 78.5 58.14 41.5 13.47 80 59.97 38.5 17.41 81 61.47 36 22.00 82 62.50 33.5 23.52 80 66.53 28 26.16 77 68.75 25 28.39 75 70.05 24.5 31.69 71 72.37 25.5 (1+1) 37.82 64 73.99 27 42.05 59 76.75 25 46.87 54 77.72 23 (1+2) 53.57 46 80.48 -13 53.57 46 80.48 -13 53.57 46 80.48 -13	179.2 192.7 362.6 432.0 192.9 209.3 393.4 469.9 216.2 242.1 418.7 499.3

cc SO ₂ per 2 g camphor	р • • • •	cc SO ₂ er 2 g camphon	p r	Schlundt	t, 1903 d	(2)	
						(a) _D	
4.3 22.9 34.2 56.3 80.8 103.8 127.9 148.9	-16° 83.9 84.0 84.3 84.3 84.3 84.6 84.6 84.6 84.7	229.0 241.7 260.2 278.3 297.2 313.0 333.6 356.0 378.1	117.7 127.6 140.6 152.8 165.9 176.0 190.7 204.6 220.5	64.515 76.595 79.492 79.492	20° 1.0924 .0449 .0345 .0345	+40.31 45.24 46.77 46.78	
203.8	100.9 -31°	414.0	244.2	20 0		37.19 36.60 36.14	
16.4	28.9	256.2	52.6	-12		36.14	
26.4 37.4 59.1 68.8 83.0 107.2 111.4 116.3 121.2	29.1 28.9 28.9 29.3 29.0 29.3	262.1 268.5 278.0 289.7 301.2 312.7 324.3 335.9 347.6 359.3 370.9 382.4 405.0 419.1	52.6 56.6 83.8 94.5 98.4 99.3 99.7 99.9 100.0				chone (C ₁₀ H ₁₆ 0)
130.1 143.0	52.8 53.3	359.3 370.9	100.6 100.8		, 1931 (f	· 	
158.5 171.3	53.1 53.3	382.4 405.0	100.8		f.t.	<u> </u>	f.t.
184.3 197.2 203.7 213.4 224.8 243.2	29.1 52.9 52.8 53.3 53.1 53.3 53.4 53.6 53.5 53.6	437.8 478.3 504.6	107.7 112.1 115.2 117.7 130.3 138.1	60 68.5 76 81.5 86 88.5 91.5 93.5	0 10 20 30 40 50 60 70	95.5 96.5 97.5 98.5 98.8 99.0	80 90 100 110 120 130 140
30.9 67.6 103.3 136.8 171.8 200.3 238.5 262.0 282.0 286.4 312.5	27.6 27.1 27.3 27.1 27.3 27.9 27.5 27.6 39.0 82.8 83.3	343.5 376.3 407.5 427.9 444.9 464.5 492.1 502.4 521.4 540.5 556.8	83.3 83.7 83.5 83.8 83.5 83.9 87.8 89.0 92.4 95.6 98.8	Sulfur Lloyd,			tic anhydride $ m H_6O_3$)
				t	C*	t	c
t	absorbed per 2g camphor	-	free inl00g solut.	~5 0 +5 10	760 m 19.6 14.8 13.6 12.2	+15 20 25 30	11.4 10.6 9.1 9.0
30 20 10 0 -16	152.5 161.2 168.0 173.6 180.0	38.5 35.6 33.4 31.3 29.7	18.2 19.1 19.7 20.3 20.8	* c = g	SO ₂ in 100	0 сс	

Sulfur dioxide ($S0_2$) + Antraquinone ($C_{14}H_80_2$)	Sulfur dioxide ($S0_2$) + Ethyl acetate ($C_uH_8O_2$)
Centnerszwer and Teletov, 1903	Locket, 1932
t %	mo1%
L V 162 11.66 - 176 - 2.15 188 - 3.29	100 - 426.9 88.95 - 429.9 76.40 0.9814 428.9 65.00 - 423.9
% f.t. % f.t.	
	Sulfur dioxide (SO_2) + Olive oil ($C_{57}H_{11}O_6$)
2.19 82.4 8.76 160.0 2.73 92.1 11.26 179.0 3.54 101.4 15.47 183.7 4.06 106.3 100.00 273	Bingham, 1907
1	C.S.T. = 28°
0,35*	
3.29 95.1 187 4.00 100.9 192.9 5.34 - 141.0 211.0 7.40 177.5 168.9 191.1 239 8.31 177.0 188.0 191.7 244 8.81 178.0 186.0 196.2 250 9.99 176.0 188.5 195.0 265 11.11 177.0 188.0 196.2 250 11.11 177.0 188.0 198.9 276 12.43 177.2 187.1 197.0 292	Sulfur dioxide (SO_2) + Diethyl sulfide ($C_4H_{1.0}S$) Albertson and Fernelius, 1943 mol% f.t. mol% f.t.
18,70 178,1 186,3 200,3 378	0 -75 78 -80 8 -77.5 79 -84 16 -84.1 E 80 -90 30 -67.5 82 -95
% t ₃ t ₄ % t ₅ t ₄ 0.41 0.51 3.82 97.3 168.1 3.19 94.2 165.2 4.06 106.3 176.3 3.19 94.9 165.8 4.20 109.7 180 3.60 98.4 166.5 5.30 120.0 198.2 5.98 140.2 172.3	41
5.30 120.0 198.2 5.98 140.2 172.3 6.84 151.4 195 7.49 158.0 179.9 8.36 159.2 208.5 8.16 160.1 178.8 8.89 173.2 213.3 15.46 181.3 215.2 14.96 189.5 249.1 0.61	Sulfur dioxide (SO_2) + Trimethyliodide sulfonium (C_3H_9IS)
3.96 99.4 153.8 7.14 137.1 159.0 9.05 146.3 156.3 14.60 156.0 172.5 15.97 169.0 184.0	Walden, 1899 c D b.t.(SO ₂)
t_1 = temperature when the liquid first disappears t_2 = " " " reappears t_3 = temperature when all solid is dissolved	7.02 +0.325 15.70 0.840 27.35 1.955 38.72 3.575
$t_{i_{\mu}}$ = " when liquid again disappears	
* = v/v_t = quotient of the total volume to the volume of the tube	

Sulfur dioxide (SO_2) + Amylamine ($C_5H_{13}N$)	Sulfur dioxide (SO_2) + Ethylaniline ($C_8H_{11}N$)
Hill and Fitzgerald, 1935	Foote and Fleischer, 1934
mo1% p mo1% p	t p t p
20° 100 21.5 60.61 14.3 90.25 78.5 56.53 23.1 81.04 158.0 53.08 73.1 73.57 177.0 49.95 212.0 67.43 173.5 49.90 509.5 64.06 8.5 (1+2) (1+1)	sat.sol. -21.75 371 20.30 1040 -15.00 481 24.00 962 -7.35 622 25.00 218 0.00 785 12.60 43 +11.00 978 6.60 18
Sulfur dioxide (SO_2) + Methylaniline (C_7H_9N)	Hill and Fitzgerald, 1935 mol% p mol% p 25°
Foote and Fleischer, 1934	100 1.5 59.83 264.5
t p t p	84.74 46.5 53.43 378.0 73.27 105.0 49.33 510.0 65.15 172.5 45.72 655.0
sat.sol.	65.15 172.5 45.72 655.0
-19,80 410 28,00 830 -9,40 568 30,00 684 0,00 763 29,10 299 6,50 892 26,30 182 10,00 958 23,50 117 14,60 1024 19,65 67 18,15 1046 14,60 35 22,50 1023 0,00 6	Sulfur dioxide (SO_2) + Dimethylaniline ($C_8H_{11}N$) Hill and Fitzgerald, 1935
	mo1% p mo1% p
Hill and Fitzgerald, 1935 mol% p mol% p 25° 100 2.0 60.55 166.1	25° 100 2.0 51.28 189.1 84.53 14.6 47.85 290.2 73.21 30.0 44.06 449.5 63.94 56.5 41.67 575.0 56.50 106.0
88.89 19.5 56.43 237.0 79.50 42.0 52.75 329.0 71.22 72.5 49.75 436.0 65.57 114.4 42.55 552.5	
Albertson and Fernelius, 1943 (fig.)	
mol% f.t. mol% f.t. 30 24 50 30 (1+1) 35 30 52 27 43 31 66 16	

SULFUR DIOXIDE + DIETHYLANILINE

	Sulfur dioxide (SO_2) + Diethylaniline ($C_{1.0}H_{1.5}N$)
Balej and Regner, 1956	
mol% p ₁ mol% p ₁	Foote and Fleischer, 1934
15° 20°	mol% p mol% p
81.70 5.27 76.73 12.25 71.88 12.30 76.20 13.25 70.56 14.19 71.22 21.23 65.27 21.51 66.34 28.08 61.63 30.3 63.15 39.3 56.79 48.7 62.60 42.2 53.90 63.4 54.68 89.0 52.70 78.6 51.17 137.3 52.23 83.6 50.43 150.0 51.09 95.0 46.62 235.5 49.28 121.0 46.51 169.5 44.58 220.5	0° 10.9 1008 38.2 359 13.8 946 43.0 276 18.3 845 46.8 225 20.7 784 54.1 149 22.6 733 65.3 81 24.9 673 74.8 44 28.4 584 90.8 13 32.9 472
25° 40°	w/11 1 Planamal d 1095
81.63 13.10 93.44 8.98 81.30 13.78 91.65 13.30	Hill and Fitzgerald, 1935
73.38 25.72 86.25 25.80	mo1% pp
65,79 48.0 81.84 36.30 65,62 49.7 80.99 39.10	2 5°
64.02 56.0 80.26 43.00	100 1.5 61.84 393.1 83.05 120.8 55.47 529.5
58.58 89.2 75.18 58.5 55.81 119.5 69.83 93.5 52.74 162.0 68.46 103.95	70.92 249.0 49.75 679.5
49.30 232.5 63.09 154.9 62.61 158.0 58.10 246.0	Sulfur dioxide (SO_2) + o-Toluidine (C_7H_9N)
24 - 27° 100.0 0.4164	Hill and Fitzgerald, 1935
95.928 .4283	mol% p mol% p
92.160 .4346 87.545 .4440	25°
83,430 ,4520	100 1.0 75.00 48.7
% Q mix % Q mix	97,94 8.0 68.44 49.0 (sic) 95,14 16,5 63,73 50,3
25°	93.09 29. 5 53.09 54.0
98.353 14950 87.545 14500	87.72 58.6 50.49 221.5
97.230 14910 87.54 14480 95.928 14860 85.09 14400	83,87 86,3 (1+1)
94.100 14800 83.43 14280	
93.154 14780 81.76 14200 92.16 14720 80.02 14140 90.27 14660 78.37 14070 89.075 14605 76.66 14000	Sulfur dioxide (SO ₂) + m_Toluidine (C ₇ H ₃ N)
	Hill and Fitzgerald, 1935
	mol% p mol% p
	15° 25°
	100 2.0 100 2.0
	86.88 25.0 87.43 42.5 74.94 60.0 74.81 123.5
	67.33 81.5 67.33 228.5 60.16 81.5 60.54 328.8
	56.15 81.0 53.34 327.0
	52.08 96.0 51.83 349.7 50.33 130.5 50.49 446.0 (1+1) 50.25 395.0 50.16 701.5

Sulfur dioxide (SO_2) + p-Toluidine (C_7H_9N)

Foote and Fleischer, 1934

Sulfur dioxide (SO_2) + Diphenylamine ($C_{12}H_{11}N$)

Foote and Fleischer, 1934

t p t p

sat.sol.

-21.40 267 +2.00 604

-20.80 274 6.30 674

-14.75 347 10.00 732

-9.00 429 19.64 852

-3.80 510

Sulfur dioxide ($S0_{2}$) + o-Phenylenediamine ($C_{6}H_{8}N_{2}$)

Hill and Fitzgerald, 1935

mo 1%	p	mo 1%	р	
	25	>		
97.74 93.09 81.79 74.70 67.99 64.53	3.5 4.0 4.0 4.0 4.0 15.4	60.90 55.56 51.02 50.94 50.76	17.0 16.7 17.5 69.0 740.0	

Sulfur dioxide ($S0_2$) + p-Phenylenediamine ($C_6H_8N_2$)

Hill and Fitzgerald, 1935

mo1%	р	mo 1%	p	
	50)0		
96.80 87.00 76.34 65.69 57.90 51.99 47.01	16.0 18.0 19.5 19.5 19.0 18.5	42.83 39.48 36.42 34.67 34.35 34.22	19.0 19.5 19.0 23.0 72.5 701.0	(2+1)

Sulfur dioxide ($S0_2$) + Benzidine ($C_{12}H_{12}N_2$)

Hill and Fitzgerald, 1935

mo 1%	р	mo1%	p	
	2	5°		
92.86 80.22 71.58 64.32 56.01 48.20	5.5 5.5 5.7 5.8 5.8	43.95 38.78 35.84 34.93 34.42 34.25	6.0 6.0 8.5 34.0 78.0 734.0	

Sulfur dioxide (SO_2) + Pyridine (C_5H_5N)

Hoffman and Vander Werf, 1946

mo1%	f.t.	mo 1%	f.t.	
0.0 4.2 8.5 13.2 17.0 23.2 25.4 26.6 30.6 35.1 41.3 49.2	-72.4 74.5 77.2 82.0 87.3 84.5 68.0 61.8 59.0 46.6 31.8 17.8 17.8 17.0 (1+1)	49.8 50.8 53.0 53.9 56.2 57.5 65.0 71.0 75.7 79.2 80.5 83.3 89.6	-7.4 7.4 7.4 8.6 11.1 11.2 21.6 32.3 42.5 50.8 54.0 52.0 47.4 -41.5	

Sulfur dioxide (SO_2) + α -Picoline (C_6H_7N)

Hoffman and Vander Werf, 1946

mo 1%	f.t.	mo1%	f.t.	
0.0	-72.4	46.3	-20.1	
2.2	74.0	46.8	20.0	
4.8	75.0	48.3	19.6	
5.5	75.3	49.4	19.5	
7.6 8.0 9.7 12.8 13.7	76.8 76.2 66.6 57.2 51.3	50.0 51.3 53.4 55.8 59.5	19.4 19.8 21.5 24.6	
16.8 16.9 20.7 21.0	43.2 42.8 36.5 36.2	62.8 64.1 66.7 68.2	30.6 36.9 39.7 44.0 47.7	
22.9	33.5	70.2	52.6	
25.4	29.5	71.8	55.5	
29.2	25.6	73.5	59.8	
29.8	25.1	75.0	63.4	
33.9	20.8	76.6	69.2	
35.9	19.3	77.8	73.5	
36.6	18.7	79.3	78.9	
39.5	17.7	79.7	78.4	
40.0	17.8	80.3	77.6	
40.7	17.9	81.7	74.6	
41.5	17.6	83.8	73.0	
42.0	18.0	90.4	67.9	
43.7	18.7	100.0	-64.2	
45.5	-19.5	(3+2)	(1+1)	

Sulfur dioxide (SO_2) + β -Picoline (C_6H_7N)

Hoffman and Vander Werf, 1946

mol%	f.t.	mo1%	f.t.	
0.0	-72. 4	53.8	-16.3	
4.1	76.6	56.1	19.5	
7.7	78.9	59.8	25.3	
13.4	84.7	63.4	31.7	
15.4	86.9	65.8	36.8	
18.7	76.Ó	68.3	41.9	
25.9	59.1	71.5	50.3	
26.5	5 7. î	74.4	56.2	
$\bar{3}2.3$	46.7	75.8	60.0	
35.9	39.8	77.7	63.7	
37.8	36.0	79.0	66.8	
38.2	35.1	80.0	62.8	
43.9	25.8	81.4	58.4	
45.0	23.2	85.9	44.6	
46.9	19.2	90.3	33.9	
48.2	16.9	94.5	26.4	
49.7	15.ó	100.0	-18.3	
51.5	- 15.0	100,0	-10,0	
01,0		+1)		

Sulfur dioxide (SO_2) +7 -Picoline (C_6H_7N)

Hoffman and Vander Werf, 1946

mol%	f.t.	m.t.	mo1%	f.t.	m.t.
0.0 1.1 2.2 3.4 4.3 4.9 6.0 6.6 6.5 7.2 8.8 9.7 10.0 11.4 11.8 14.8 16.1 18.0 21.5 24.0 24.0 24.0 24.0 27.8 28.6 29.7 29.7 29.7 29.7 29.7 29.9 30.9 29.9 30.9 29.9 30.9 29.9 30.9 29.9 30.9 29.9 30.9 29.9 30.9 29.9 30.9 29.9 29.9 29.9 29.9 29.9 29.9 29.9 2	-72.4 73.4 74.0 74.8 75.5 74.0 68.0 65.0 66.3 59.2 59.2 59.4 451.5 48.0 43.8 40.9 33.7 83.8 40.9 33.8 29.1 27.6 27.6	-38.8 36.9 36.2 34.2	31.5 32.27 33.5 32.27 33.5 35.5 36.5 37.3 38.4 41.27 44.77 45.9 49.0 51.0 49.0 51.0 67.1 68.6 67.1 68.6 70.6 70.6 70.6 70.6 71.6 72.6 72.6 72.6 72.6 72.6 72.6 72.6 72	-26.6 27.0 26.4 24.8 21.2 11.7 12.8 3.8 4.1.5 5.0 4.8 21.2 10.0 15.0 15.0 19.0 24.8 21.2 10.0 15.0 19.0 24.8 21.3 14.7 15.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19	-26.5 26.6 23.1 21.0 15.8 11.0 9.3 -0.9 +2.3 -0.0 -1.6 6.4 25.1 224.5 24.5 24.5 24.5 24.5 24.5

Sulfur dioxide ($S0_2$) + 2,3-Lutidine (C_7H_9N)

Hoffman and Vander Werf, 1948 (fig.)

mo 1%	f.t.	mo 1%	f.t.
0 8.7 20 40 50	-74 -78,8 E -30 +12.5 +18,5 (1+	60 76.5 80 100	+8 -17.5 E -13 -9.8

Sulfur dioxide (SO $_2$) + 2,4-Lutidine (C $_7\mathrm{H}_9\mathrm{N}$) Hoffman and Vander Werf, 1948 (fig.)	Sulfur dioxide ($S0_{_{\rm Z}}$) + Ammonium thiocyanate ($CH_{\rm h}N_{_{\rm Z}}S$)
mol% f.t. mol% f.t.	Walden and Centnerszwer, 1902
0 -74 50 -8.3 (1+1)	M D b.t. (SO ₂)
4.9 -78 E 60 -13 20 -56 70 -18	
28 -50 75.1 -23.1 E 30 -45 80 -20 40 -15	0.795
Sulfur dioxide (SO_2) + 2,6-Lutidine (C_7H_9N)	Foote and Fleischer, 1932
Hoffman and Vander Werf, 1948 (fig.)	t p t p
mol% f.t. mol% f.t.	(1+1)+L+V C+L+V
0 -74 60 -2.0 3.7 -75.5 E 78.1 -18.0 E 20 -20 80 -16.0 40 +2 100 -5.9 50 +4 (1+1)	-20,40 415 +3,00 947 -19,75 426 4,00 987 -16,50 480 4,50 1007 -13,20 553 5,70 1057 -7,70 681 6,40 1085 -5,90 724 7,20 1124 -3,50 789 0,00 874
Sulfur dioxide (SO ₂) + Quinoline (C ₉ H ₂ N)	t p dissoc.
	(1+1)
Hill and Fitzgerald, 1935	-20.90 201 -12.60 352
mol% p mol% p	-7.50 496 -4.60 599
25≎	0.00 801
100 2.0 56.11 50.5 87.50 16.3 51.82 62.4 81.65 36.2 50.95 174.1 68.34 47.0 50.46 360.0 64.36 48.2	Franklin, 1911
	M molar. cond.
Sulfur dioxide (SO_2) + Tetramethylammonium iodide ($C_4H_{1.2}NI$)	
Franklin, 1911	0.40 7.99 8.52 8.63 8.77 8.88 0.20 7.38 7.42 7.75 7.70 7.52
M molar conductivity -33.5° -20° -10° 0° +10°	
2.70 23.80 30.55 35.50 40.94 45.28 1.36 54.54 61.29 68.00 72.80 80.64 0.69 67.83 76.22 84.42 89.60 95.58 0.35 73.82 81.94 88.60 93.52 98.12 0.18 75.83 83.36 89.92 92.86 96.64	

Sulfur dioxide (SO_2) + Nitrobenzene ($C_6H_5NO_2$)	% n % n
Lloyd, 1908 t c* t c* 760 mm	25° 100.00 545.7 40.89 417.8 91.98 542.2 29.29 355.8 74.47 529.5 25.10 343.3 68.76 521.5 20.27 322.3 51.27 464.1 18.16 311.8 0.00 255.9
15 31.14 40 13.20 20 26.74 50 9.87 25 22.79 60 7.86 30 19.00 *c = g SO ₂ in 100 cc	Sulfur dioxide (SO_2) + Ethyl alcohol (C_2H_6O) Carius, 1855
Sulfur dioxide (SO_2) + o-Nitrotoluene ($C_7H_7NO_2$)	t d absorption t d absorption coeff. coeff.
Lloyd, 1908 t	sat.sol. 0 1.1194 327.80 13 0.9796 160.65 1 .1055 311.26 14 .9725 152.08 2 .0922 295.34 15 .9658 144.13 3 .0794 280.03 16 .9597 136.79 4 .0671 265.33 17 .9541 130.06 5 .0553 251.24 18 .9490 123.95 6 .0441 237.77 19 .9444 118.45 7 .0333 224.92 20 .9404 113.56 8 .0231 212.67 21 .9368 109.29 9 .0134 201.04 22 .9338 105.63 10 .0042 190.02 23 .9312 102.58 11 0.9955 179.62 24 .9292 100.15 12 .9873 169.82 25 .9277 98.33
Sulfur dioxide (SO_2) + Methyl alcohol ($CH_{i_0}O$)	t d t absorption coeff.
Baume and Pamfil, 1914 mol% f.t. mol% f.t.	4.0
0 -72.1 63.7 -86.3 10.5 74.7 67.7 80.8 22.8 77.9 71.2 81.2 38.0 83.0 74.7 84.0 41.6 85.2 76.0 84.0	24.4 97.43
38.0 83.0 74.7 84.0 41.6 85.2 76.0 84.0 46.0 90.2 80.8 91.5 56.1 79.3 86.4 101.5 58.7 78.5 92.2 104.0 61.3 86.3 100.0 -96.5 63.0 -89.5 (1+1) (1+2)	Sulfur dioxide (SO_2) + Cetyl alcohol ($C_{16}H_{34}O$) Seyer and Ball, 1925
Lewis, 1925 % d % d 25°	% f.t. % f.t. 0.0 -72.7 34.87 23.9 0.42 +5.3 46.39 24.8 7.70 22.2 57.46 25.5 10.42 22.6 66.27 27.8 11.20 22.7 78.93 30.9 28.34 23.8 95.85 41.6 31.18 23.5 100.00 48.0
100.00 0.7872 40.89 1.0891 75.78 .8180 29.29 .1602 78.42 .8814 25.10 .1881 74.47 .8975 20.27 .2242 68.76 .9300 18.75 .2261 51.27 1.0280 18.16 .2320 44.78 1.0655 0.00 .3667	

Sulfur dioxide (SO_2) + Glycol (C_2H_6)	60a)
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Foote and Fleischer, 1934

mo 1%	p	mo 1%	p	
	0)		
29.3	1055	72.8	427	
32.7	1028	79.4	291	
42.5	951 857	86.2 90.7	168 99.1	
50.1 56.4	758	93.2	66.7	
66.0	571	70.2	00.7	

Sulfur dioxide (SO_2) + Hydroquinone ($C_6H_6O_2$)

Centnerszwer and Teletow, 1903

%	f.t.	%	f.t.	
0.88	63.0	7.68	134.2	
1.20	73.5	9.35	136.7	
2.13	89.2	11.73	141.4	
4.27	117.6	12.96	145.0	
5.38	123.3	100	160.0	

Sulfur dioxide (SO_2) + α -Naphthol ($C_{10}H_80$)

Foote and Fleischer, 1934

t	p	
	sat.sol.	
-20.00 -10.00 0.00	461 715 1066	

Sulfur dioxide ($S0_2$) + β -Naphthol ($C_{10}H_80$)

Foote and Fleischer, 1934

t	р	
sat	sol.	
-21.20 -9.50 0.00	451 761 1124	

Sulfur dioxide ($S0_{\text{2}}$) + Acetic acid ($\text{C}_{\text{2}}\text{H}_{\text{4}}0_{\text{2}}$)

Scheub and Mc Crosky, 1944

mo 1%	f.t.	mo1%	f.t.	
100 92.3 90.4 86.9 82.0 75.3	16.6 11.5 8.3 -44.2 -44.2 -41.9	66.5 53.6 40.4 36.7 21.7 0.0	-40.4 -38.0 -38.7 -39.2 -75.6 -72.7	

Sulfur dioxide (SO_2) + Oleic acid ($C_{1g}H_{34}O_2$)

Bingham, 1907

$$C.S.T. = 24^{\circ}$$

Sulfur trioxide (SO_3) + Methanesulfonic acid (CH_hO_3S)

Sandeman, 1953 (fig.)

%	f.t.	
100 89 79 63 17 12	+16 - 6 +18 (1+3) - 5 -12 +11 +17	

Prideaux and Green, 1924 L V L V L V 34 vol% at b.t. 9.8 40.59 - 0.0131 .0029 13.2 45.08 - 45.59 .0131 .0029 18.3 50.53 - 51.22 .0111 .0031 22.2 55.19 - 55.63 .0094 .0032 26.9 61.38 - 61.35 .0066 .0038 27.6 62.87 - 62.93 .0065 .0043 28.15 63.36 - 63.36 .0046 .0046 43 vol% 9.8 40.59 - 0.0150 0.0030 53.6 97.18 77.5 99.28 14.3 44.96 - 45.57 .0130 - 0.0034 62.1 97.16 89.8 98.52 20.5 51.75 - 52.29 0.0096 .0035 68.6 97.35 91.4 99.74 24.6 56.67 - 57.01 .0073 .0041 76.3 98.26	
L V L V 43 vo1% at b.t. 9.8 40.59 - 0.0150 0.0030 53.6 97.18 77.5 99.28 14.3 44.96 - 45.57 .0130 - 0.0034	l
at b.t. 9.8 40.59 - 0.0150 0.0030 53.6 97.18 77.5 99.28 14.3 44.96 - 45.57 .0130 - 0.0034	ļ
76.3 98.26 76.3 98.26 26.05 58.42 58.42 .0055 .0055	!
% D b.t. (alcohol) % D b.t. (alcohol) 55 vol%	
99.57 +0.042 81.20 +2.230 11.35 40.02 - 41.05 .0164 .0038 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0043 18.4 47.02 - 48.06 .0126 .0050 18.4 19.2 19.2 19.2 19.2 19.2 19.2 19.2 19.2	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
second series 100 \$	
98.41 +0.165 83.50 +1.915 5.85 27.40 0.0248 0.0033 97.20 0.295 82.00 2.105 10.65 30.45 .0215 .0034 95.80 0.425 80.30 2.335 15.40 33.80 .0184 .0036 94.32 0.585 78.60 2.601 22.40 39.70 .0140 .0038 92.93 0.735 75.40 3.040 29.35 45.90 .0103 .0046 91.20 0.985 72.50 3.475 31.00 47.60 .0089 .00495 89.20 1.195 69.30 3.995 32.00 48.80 .0064 .0064 87.30 1.385 67.30 4.515 * v ₀ = volume at 0° and 1 atm.	
Nitrous oxide (N_20) + Ethane (C_2H_6) Lecat, 1949	
Kuenen, 1895 and 1897	
t P condens, v/v _o * V L 0 +15 (45 atm. 20 +12.8 (45 atm. 100 -88.6 (1 atm.) +28 (45 atm.)) Az)
4.8 35.2 0.0206 0.0022	
13.3	
18 vol%	
2.85 35.34 - 35.55 0.0205 0.0026 11.8 43.57 - 43.91 .0143 .0029 19.05 51.48 - 51.81	
23. 2 56.40 - 56.57 0.094 0.0031 29.8 65.32 .0052 .0052	

Nitrous oxide (Caubet, 1904	N_20) + Carbon d	ioxide (CO	٤)	11.278 9.394 7.509 5.623	- - -	30.3 42.47 48.40 56.06 54.75	4.304 3.172 1.947	dew point 0.754 1.947	69.20 69.54 69.80
tot.vol. vol.liq.	8.094 %	. vol.liq.	P	11.278 9.394 7.509 5.623	- - -	33.4 43.17 49.44 57.24 66.27	3.031 2.795 2.135	dew point 1.037 2.135	73.70 74.07 74.10
10.700 - 9.167 - 7.557 dew point 10.700 - 9.167 - 7.634 - 6.254 dew point 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 - 10.700 - 9.167 - 7.634 - 6.101 -	41.35 4.567 45.71 3.034 50.60 1.647 55.60 25.1° 42.33 5.717 46.92 4.567 52.30 2.958 58.00 1.667 27.5° 42.93 1.769 59.30 30° 43.64 4.644 48.35 3.034 54.06 1.884 60.09 33.5° 44.42 4.567 49.65 3.954 60.09 33.5° 44.42 4.567 49.65 3.954 60.09 33.5° 60.09 33.5°	1,884 dew point 2.038	59.95 60.63 61.00 62.80 63.50 63.90 65.90 67.08 67.10 69.72 71.10 72.00	8.840 7.361 5.883 10.318 8.840 7.361 6.696 8.840 7.361 5.883 8.840 7.361 5.883 4.774 8.840 7.361 5.883 4.774	dew point 0.333 dew point 0.295 dew point - dew point - dew point - dew point	48.40 14.1 45.29 49.60 49.73 17.1 41.93 46.08 50.71 53.10 18.4 46.25 51.29 55.20 47.37 52.58 58.40 49.42 54.92 61.29	4.404 2.926 1.580 5.883 4.404 2.704 1.595 8° 4.404 2.704 1.632 3.369 2.408 1.810 4.330 3.295 2.189 1.869	0.961 1.580 0.148 0.591 0.961 1.595 0.517 1.035 1.632 0.295 0.924 1.773 0.591 1.109 1.810 dew point 0.552 1.869 dew point 0.739	50.53 50.73 51.00 53.44 53.69 53.94 54.30 55.91 56.40 58.59 59.60 65.98 66.51 66.70 69.00 69.33 69.90 71.90 72.10
11.278 - 9.394 - 7.509 dew point		0.297 0.768 1.664	50.12 50.60 51.90	5.883 4.404 8.840 7.361 5.883 4.404	-	51.28 57.36 64.78 71.80		1.965 dew point 0.887 2.135	72.80 75.00 75.23 75.70
13.167 - 11.278 - 9.394 - 7.509 - 11.278 - 9.394 -	18.8° 35.05 6.943 39.49 5.058 44.50 3.502 50.41 1.711 23.4° 40.39 4.681 45.86 3.267	dew point 0.472 0.768 1.711 0.377 0.848	52.50 52.78 53.38 54.40 58.78 59.20	10.455 9.581 8. 707 7.834 7.659	- - - - dew point	78.68 13.6 40.73 43.02 45.70 48.58 50.57	5.911 3.465 2.504 1.587	0.262 0.874 1.136 1.587	50.75 50.75 50.80 51.50
7.509 - 5.906 dew point 13.167 - 11.278 - 9.394 - 7.509 - 5.623 -	52.60 1.758	1.758	59,80 63.00 63.32 63.95 64.10		dew point 0.349 0.612	15.3 52.82 52.92 52.92 18.3 33.64 37.06 41.70	3.552 2.679 1.630 6.174 4.339 2.635	1.048 1.281 1.630 dew point 0.480 1.005	52.95 52.95 53.80 56.20 56.38 56.58
11.278 - 9.394 - 7.509 - 5.623 -	41.92 4.822 47.68 3.738 54.85 2.559 63.14 1.852	$0.565 \\ 1.178$	65.90 56.22 66.47 66.80	8.707 6.960 10.455 8.707 6.960 5.256	- - - dew point	46.99 52.94 23° 42.88 48.98 55.38 62.60	3.552 2.242 1.761	1.674 0.699 1.395 1.781	57.20 62.99 63.19 63.40

NITROUS OXIDE + CARBON DIOXIDE

9.581 8.707 7.834 6.960 6.086	- - - -	25° 46.20 5.212 49.28 4.776 52.66 4.077 56.39 3.115 60.52 1.805	dew point 0.349 0.743 1.805	64.11 65.80 65.88 66.08 66.10	28.4° 10.533 - 45.04 4.496 - 70.21 9.013 - 50.00 3.892 dew point 71.50 7.515 - 56.17 1.930 1.930 71.70 6.005 - 63.39 30.7° (critical)
8.707 6.960 6.086 5.212	-	57.32 3.290 61.16 2.504 65.09 1.875	dew point 0.612 1.136 1.875	67.80 68.00 68.10	10.533 - 45.45 4.496 - 72.03 9.013 - 50.77 3.213 dew point 74.30 7.515 - 56.98 2.156 2.156 74:50 6.005 - 64.36
10.455 8.707 6.960 5.212	- - - -	29° 44.75 3.902 50.90 2.941 58.83 2.154 66.71 2.006 92.579 \$	dew point 0.786 1.717 2.006	71.70 72.00 72.00 72.00 72.00	15.3° 12.681 - 35.716.6896.689 dew point 53.20 10.868 - 40.12 5.418 0.772 53.60 9.051 - 45.27 3.601 0.772 53.90 7.234 - 51.65 1.603 1.603 54.50
12.950 11.096 9.243 7.388	- - -	34.97 6.600 39.43 4.605 44.63 3.214 50.93 1.591	dew point 0.510 1.8347 1.591	53.80 54.64 54.88 54.90	19° 12.681 - 36.37 5.963 dew point 57.90 10.868 - 40.92 3.420 0.817 58.20 9.051 - 46.27 1.966 1.453 58.50 7.234 - 52.73 1.658 1.658 58.70
12.950 11.098 9:243 7.388	- - -	35.46 5.997 39.97 4.605 45.23 2.565 51.83 1.637	0.927 1.637	57.07 57.60	23.2° 12.681 - 37.30 5.055 dew point 64.1 10.868 - 42.00 3.601 0.545 64.1 9.051 - 47.70 2.330 1.181 64.1 7.234 - 54.88 1.712 1.712 64.1 5.418 - 62.75
12.950 11.098 9.243 7.388	- - -	36.01 5.533 40.57 3.492 46:23 2.658 53.20 1.684	1.684	61,25 61.47 61.60	12.681 - 32.23 5.418 - 65.31 10.868 - 43.20 4.055 dew point 70.13 9.051 - 49.13 2.693 0.999 70.30 7.234 - 56.77 1.921 1.921 70.33
12.950 11.098 9.243 7.388	- - -	36.33 5.533 40.95 5.162 46.65 3.678 53.89 1.730 26.6°	0.556 1.730	63.60	30.8° (critical) 12.681 - 38.80 7,234 - 57.99 10.868= - 43.84 5.418 - 67.24 9.051 - 49.90 2.330 2.330 74.30
12.950 11.098 9.243 7.388 5.533	- - - -	37.16 4.420 41.96 3.492 48.00 2.379 55.63 1.823 64.23	dew point 0.403 1.252 1.823	68.65 68.87 68.87 68.97	critical point vol. t P
12.950 11.098 9.243 7.388	- - -	37.54 5.533 42.36 3.771 48.46 1.962 56.20 37.7° (critical	dew point 1.962	65.27 72.20 72.20	18.941 2.889 34.4 75.8 48.403 2.667 33.0 76.8 78.682 2,766 31.2 75.8
12.950 11.098 9.243 7.388	- - - -	37.88 5.533 42.88 3.678 49.22 3.121 57.07 2.287 95.915 \$	-	66.58 74.10 74.50 74.70	Cook, 1953 t P 0.0* 25.8* 50.0* 61.7* 74.2* 88.1* 100.0*
10.533 9.013 7.515 6.458	- - - dew point	16.5° 41.68 4.496 46.09 2.914 50.80 1.553	1.555	55.07 55.21 55.57	20 49.76 53.88 52.17 54.66 55.31 56.01 54.43 21 - 55.18 53.39 55.90 56.67 57.34 - 22 52.10 56.42 54.60 57.25 57.91 58.68 59.16 23 - 57.65 55.78 58.49 59.25 60.05 - 24 54.49 58.98 57.08 59.80 60.60 61.41 61.97
10.533 9.013 7.515 6.005	= = = = = = = = = = = = = = = = = = = =	59.05 1.628	dew point 0.528 1.056 1.628	59.60 59.80 59.80 60.10	26 56.98 61.39 59.60 62.59 63.46 64.15 64.89 27 - 63.07 60.85 64.05 64.91 65.79 - 28 59.53 64.47 62.25 65.53 66.39 67.31 67.90 29 - 65.97 63.64 67.03 67.93 68.85 - 30 62.16 67.38 65.06 68.53 69.46 70.37 71.11
10.533 9.013 7.515 6.005	<u>:</u>	23.3° 43.39 5.024 48.33 3.817 53.74 2.421 60.16 1.704 26.5°	dew point 0.528 1.056 1.704	63.58 63.80 64.08 64.25	31 - 68.93 66.49 70.04 71.05 72.00 - 32 64.88 70.40 67.98 71.57 33 69.46 34 67.67 - 71.07
10.533 9.013 7.515 6.005	- - - -	44.43 4.496 49.39 4.232 55.06 3.741 61.73 1.817	dew point 0.754 1.817	68.39 68.70 68.70 68.70	- 11 HUA N

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NITROUS OXIDE + CYANOGEN

Cook, 1953 Nitric oxide (NO) + Methyl ether (C_2H_6O) d(moles/1) t V Baum and Germann, 1911 0.0mo1% 25.8mo1% 50.0mo1% mol% f.t. mo 1% f.t. 3.61 3.75 17.93 3.88 18.00 4.09 17.89 20 21 22 23 24 25 17.74 4.03 17.78 17.57 4.25 17.68 100 3,86 43.3 -159.0 17.56 17.38 $\substack{4.19\\4.35}$ -138.4 17.48 17.24 4.42 91.0 162.4 165.9 139.5 38.8 17.36 4.02 4.60 141.9 146.6 84.7 33.5 29.3 17.18 4.52 4.71 4.79 17.00 4.16 17.14 79.2 166.7 4.32 16,93 16.90 5.01 16.73 74.0 26.3 23.3 5.24 5.50 5.78 143.3 167.4 167.7 26 27 4.92 5,13 4.48 16,68 16,65 16.44 69.4 4,63 16.45 16.37 16, 12 144.6 4.84 5.07 5.29 5.59 5.91 20.4 169.1 65.6 145.7 147.2 118.7 28 29 30 31 32 33 16, 18 15, 90 15, 61 15, 27 15.77 5.65 ī7. I 64.8 169.9 15.72 6.13 15.07 14.93 6.55 7.08 7.84 5.96 6.33 58.ú 55.9 11.2 170.6 15.32 150,4 10.6 169.0 14.88 14.37 14.29 14.38 52.0 14.93 -153.2-160.9 6.806.29 6.72 14.49 7.42 13,69 34 14.04 8.58 12,47 35 7.38 13,36 36 8.54 12,06 Dinitrogen tetroxide (N204) + Bromoform 74.2mo1% 88.1mo1% 100.0mo1% (CHBr₃)4.29 17.72 20 21 22 23 24 25 26 27 28 29 30 17.58 17.60 Pascal, 1923 17.34 17.07 4.52 4.71 4.58 4.79 4.46 17.47 17.34 4.64 17.20 17.09 % % f.t. m.t. f.t. m.t. 5.02 5.26 5.53 5.80 4.83 4.92 5.16 16.95 16.82 16.53 16.77 16.67 16.37 16.03 5.07 5.32 5.58 16.45 5.42 5.72 16.23 15.90 15.53 15.11 30 100 16.12 +7.5 +5.8 +2.5 95.2 +6.8 21.5 -13.5 -13.515.76 5.90 6.26 5.71 7.29 15.68 15.28 6.05 20.5 6.16 90.5 +4.7 J13 -13.515.36 6.45 6.93 7.58 80 +1 14,2 -12 -13.56.55 14.92 -0.5 -3.5 14.80 14.18 13.19 69.5 -8 ĨÒ. -11 -13.5 7.07 14.57 60 -13.5 5.4 -10.5 7.75 13,83 13,60 -12 -6.0 -13.5 50 -10.2 -9.0 40 -13.5Fuchs, 1918 Dinitrogen tetroxide (N2O4) + Carbon tetrachlovol% % Dv % Dv vol% ride (CCl_h) 19.50 716 mm 100 0 40 $\frac{1.17}{1.02}$ Pascal, 1923 90 0.38 30 80 20 % % 0.85 0.64 f.t. m.t. f.t. m.t. 70 1.17 10 0.41 60 1.34 0 -49 31 22 100 -23.5 31.5 -23.5 -20.5 40.0 50 1.42 36.5 43.5 30.0 17 98.2 96.0 38.5 22.5 10.0 14 11 49,0 43.5 -34.5 91.5 49.0 ĩã 85.0 49.0 -10.2 0.0 -10,2 70.5 Nitrous oxide (N_20) + Cyanogen (C_2N_2) Pannetier and Sigard, 1955 (fig.) % infl.p.* % infl.p.* Dinitrogen tetroxide (N_2O_4) + Ethylene bromide in A in B in A in B $(C_2H_{\mu}Br_2)$ 50 56 55 500 54 70 Frankland and Farmer, 1901 500 400 20 65 53,5 280 200 15 100 100 Z D b.t. D b.t. 53 190 180 10 200 165 50 100 180 300 220 45 90 600 350 1.70 +0.134 12.71 18.54 +1.102 $\bar{4}.66$ 1.650 2.127 7.24 ,620 inflammability pressure (in mm) 9.49 .824 in A: in tube of 15 mm in B: in tube of 25mm

799

Dinitrogen tetroxide ($N_2\theta_{\perp}$) + Propylic ether ($C_6H_{1\mu}\theta$)

Whanger and Sisler, 1953 (fig.)

mo 1%	f.t.	m,t,	mo 1%	f.t.	m.t.
0 20 40 60	-10 -18 -27 -50	- - - -78	73 80 90 100	-77 -78 -85 -122	-77 -114 -126 -114(II)

(1+2) (?) f.t.= -77.5°

E (I): above 95 % = -114E (II): above 95 % = -126

Dinitrogen tetroxide ($N_2 O_{\tau_e}$) + Isopropylic ether ($C_6 H_{1\, te} O$)

Whanger and Sisler, 1953 (fig.)

mo 1%	f.t.	E	mo1%	f.t.	E
0	-10	-	73	-65	_65
20 40 60	16 24	-	80 90 95	66 7 4	- 85
60 65	43 -54	-65	95 100	85.5 -85	-85.5
05	-0-1	(1+2)	100	0.5	-

Dinitrogen tetroxide ($N_{\rm 2}0_{\rm 4}$) + Butyl ether ($C_{\rm 8}H_{\rm 1\,8}0$)

Whanger and Sisler, 1953 (fig.)

mo 1%	f.t.	E	mo 1%	f.t.	E
0 20 40 60 76	-10 15 27 46 -80	- -80 -80 (1+2)	80 90 95 100	-80 85 95.5 -95	-80 95 95.5 -95

Dinitrogen tetroxide ($N_2 0_{\rm h}$) + tert, Butyl ether ($C_2 R_{1\,8} 0$)

Whanger and Sisler, 1953 (fig.)

mo 1%	f.t.	mo 1%	f.t.	
0 20 40 60	-10 13 24 -32	80 91 100	-45 -6 2 E -60	

Dinitrogen tetroxide ($N_2 0_{\rm t_{\rm h}}$) + Acetylene tetrabromide ($C_2 H_2 B r_{\rm t_{\rm h}}$)

Frankland and Farmer, 1901

%	D b.t.	
2.47 7.38 12.71 16.08	+0.101 .340 .607 .743	

Dinitrogen tetroxide (N_2O_4) + Benzyl chloride (C_7H_7Cl)

Frankland and Farmer, 1901

%	D b.t.	%	D b.t.	
1.21 3.99 5.51 7.50	+0.139 .476 .662 .916	10.36 12.87 15.04	+1.289 .627 .926	

Dinitrogen tetroxide ($N_{\rm 2}0_{\rm 1}$) + Trimethylene oxide ($C_{\rm 3}H_{\rm 6}0$)

Sisler and Perkins, 1956 (fig.)

mo1%	f.t.	Е	mo 1%	f.t.	E
0 20 40 42 43 48 50	-10 20 45 53 55.4 55 -58,5	- -55.4 -55.4 (1+1) -58.5	58 60 65 80 86.5 87 94	-58 56 53 67 80.5 85	-58.5 (1+2) 80.5 80.5* 99.8 -99.8
37	-36,3	-36.3	100	-99	*tr.t.

Dinitrogen tetroxide ($N_2\theta_{\iota_k}$) + Glycol_diethyl ether ($C_6H_{1\,k}\theta_2$)

Whanger and Sisler, 1953 (fig.)

mol%	f.t.	m.t.	mo 1%	f.t.	m.t.
0 20 40 46 60	-10 20 45 59 -60	- -59 -59 -60	80 90 95 100 (1+1)	-60 68 74 -73 (1+2	-77 -74 -74 -7

Dinitrogen tetroxide (N_2O_4) + Methyltetrahydrofurane $-\alpha$ ($C_5H_{10}0$)

Whanger and Sisler, 1953 (fig.)

mo1%	f.t.	mo 1%	f.t.
0 25 40 50	-10 -27 -43 -65,5 E	66 80 95	-50.5 (1+2) -60 -95

Dinitrogen tetroxide (N_2O_4) + 2,5-Dimethy1tetrahydrofurane ($C_6H_{12}O$)

Sisler and Perkins, 1956

mo 1%	f.t.	Е	mo1%	f.t.	Е
0	-10	-	45 67	-52	-80
30 36	-45 -80	- 80	92	- 34 - 67	-
					(1+2)

Dinitrogen tetroxide (N204) + Perfluortetrahydrofurane (C_4F_80)

Whanger and Sisler, 1953 (fig.)

mo1%	f.t.	mo 1%	f.t.	
0 20 40	-10 -12 -13	60 80 98 100	-17 -25 -65 vitreous	

Dinitrogen tetroxide ($N_g O_{4}$) + 1,3-Dioxane $(C_{\downarrow}H_{g}O_{g})$

Whanger and Sisler, 1953

_	mo1%	 f.t.	mo1%	f.t.
	0	-10	60	0
	22	-26 E	80	-20
	40 50	- 1	91	-45,5 E
	50	+2 (1+1)	100	-42

Dinitrogen tetroxide (N_20_4) + 1,3-Dioxolane $(C_3H_6O_2)$

Sisler and Perkins, 1956

mo1%	f.t.	E	mo1%	f.t.	E
0	_10	_	65	-52	_
0 25 26 30 40 45	- 30	-	82	-90	_
26	-35	20. 2	82 88 92	-93	-108.4
30 40	-32.2 -34.7	-39.2	92	-108.4 -102	-108.4
45	- 35	-	100	-95.8	_
		(3+2)			

Dinitrogen tetroxide ($N_2 O_4$) + Trioxymethylene $(C_3H_6O_3)$

Whanger and Sisler, 1953 (fig.)

mo 1%	f.t.	E	mo1%	f.t.	E
0	-10	_	50	+1	~ 10
20 26	-21	_	60	+20	_
26	- 29	- 29	70	+35	-
40 44	-12	70	100	+63_64	-
44	- 10	-10	(1+1))	

Dinitogen tetroxide (N_2O_4) + Camphor ($C_{10}H_{16}O$)

Pascal and Garnier, 1923

%	f.t.	E	min.	
0 5 10.1 18.0 25.0 29.3 35.0 37.4 40.2 47.0 55.0 55.5 60.0 64.1 66.4 69.0 70.0 72.2 74.0 78.0 79.2	-10.2 10.8 12.5 15.5 29.376.5 60.5 53.5 52.3 52.1 53.5 55.5 46.7 45.5 46.5 31.17	-10.2 12.0 16.5 24.5 60 60 60 60 60 55.5 55.5 55.5 55.5 46.5 46.5 46.5	1.5 2.5 3.9 2.5 1.5 1.5 1.2 3.2 - 2.5 4.5 3.5	
(5+4)	f.t. = -52			

$$(5+4)$$
 f.t. = -52

$$(2+3)$$
 f.t. = -45.51

Dinitrogen	tetroxide	($N_2 O_4$)	+ Benzophenone
_					$(C_{13}H_{10}O)$

Addison	and	Sheldon.	1956	1	fig	١
Addison	ana	Sherdon.	1900	1	1 1 12 .	,

solf.	f.t.	E	f.t.(2+1)	
0	- 12			
6	-13	1.4	_	
10	-16	- 16	•	
15	-10	-	-	
20		-		
	-1	-	_	
30	+8	~	7	
40	12		+20	
50	13.5(1	+1) _	+ 25	
51	12.5 5 11	_	-	
52		_	_	
55	12	+12		
58	17	12	29	
61	21	12	29.2	
67	28	12	$\frac{1}{29}, \frac{1}{5}$	
70	29	29	27,0	
80	$\bar{38}$	-/	~	
90	42	_		
100	48	-	~	
100	70	-	-	

Dimitrogen tetroxide ($N_2\theta_4$) + Acetic anhydride ($C_{14}H_6O_3$)

Addison and Sheldon, 1956 (fig.)

mo1%	f.t. I	E	f.t. II	E
27	_30			
35	38	-	**	-
39	46	-47	-	-
40	47			-
41	46	-47	_	-
50	43,5(1+1)	_	_	-
60	45		_	-
70	45 52 55	-	_	_
72	55	-67tr.t.	_	_
76	56	-67	_	_
80	63	-67	~	
82	67	-7 6	_	-77
85	66	-76	-	-77
90	7 3	-76	-	-77
91	7 6	_	_77	
95	74	_	-76	- 7 7
100	-70	-	-72	_
1				

Dinitrogen tetroxide ($N_{\rm 2}\theta_{\rm h}$) + Ethyl acetate ($C_{i_{\sharp}}H_{g}O_{g}$)

Addison and Sheldon, 1956

mol%	surfusion	f.t. A	E	f.t. B	E
36	_	-40		-40	
38	-	.42	-72	-42	-
40	~			-47	_
40 45 5 2	-	-57	-72	_3.5	
52	-	-72	-72	-7 8	_
55		-67	_	-78	-78
5 7	-	-68		₋ 73	_
67.5	~	-64.5		-71.5	_
72	-	-65	_	-7 3	-
82	-90	~70	~84	-81	_87
83	89	~72	~84	-84	- 87
84	_	~7 4	- 84	-83	_
85	_	~ 7 5	~84	-82	_
94	-	-84	-	- 84	_
100	_	~80	-	-80	-
		(1+2)		(E)	

Dinitrogen tetroxide (N_2O_4) + Nitromethane (CH₃NO₂)

Addison, Hodge and Lewis, 1953 (fig.)

Addis	on, nouge	and he	1113,	1700 (115	• /
78	m.t.	f.t.	%	m,t,	f:t.
100	- 29	-29	53	_	-56 E
90	-43	-33	40	_	-42
85	-47	- 35	25	~5 7	-28
78	-57	-38	10	~28	- 1 7
70	-	-42	0	- 12	_12
1 /6	н	0/g		н	
A Martin Martin (Alan I. Park		- 10°			
99.998	0.001	60		0.05	
99.5	.04	40		.02	
80	.10	20		.003	
70	.08	10		.003	
70	.00	10		.001	
t	н	t		н	
		57%			
11.2	0.0703	- 14	. 0	0.0486	
1.0	.0645	- 19		.0445	
-10.0	.0525	-31		.0354	
-12.0	.0507	-40		.0281	
-13.0	.0495	_50	.0	.0205	
M (N20)	₊) λ	M		λ	
		- 10°			
0.00026	1.29	0.0		0.093	
.00045	1.17	. 0:		.063	
.00084	0.703	. 05		.047	
.0022	0.347	. 2	10	.031	
. 0045	0.190				

0.00026 .00045 .00084 .0022 .0045

1.29 1.17 0.703 0.347 0.190

DINTROCK TETROXII	DE + p-IOLTE CTANIDE	803
Dinitrogen tetroxide ($N_2 O_{14}$) + p-Toly1 cyanide ($C_9 H_7 N$)	Dinitrogen tetroxide (N_2O_4) + o-Nitrotol ($C_7H_7O_2N$)	
Addison and Sheldon, 1956 (fig.)	Breithaupt, 1910	
mol% f.t. A E f.t. B E	mo1% f.t. mo1% f.t.	
0 -1212 -	100 -7.0 66.01 -30.5	
$\begin{bmatrix} 0 & -12 & - & -12 & - \\ 10 & -14 & - & -14 & -24 \\ 18 & -16 & -19 & -16 & -24 \end{bmatrix}$	99.95 8.5 63.52 32.4	
20 -19 -19 - 25 -12 -19 -21 -24	92.60 9.5 60.04 36.0 89.48 10.5 56.99 41.3 85.91 12.2 54.64 45.9	
30 _9 _19 _16 _24	84.98 14.8 50.60 45.0 83.52 14.8 50.17 47.0	
50 -17.5 - 57 -28 -9	82.18 15.6 47.49 51.1 80.64 21.5 45.00 50.9	
40 -3 -10 - 50 -17.5 - 57 -28 -9 60 -3 E - 3 -9 65 +3 - +3 - 70 10 - 10 - 80 20 - 20 -	79.51 17.3 43.61 52.0 76.72 18.3 41.71 50.15	
70 10 - 10 - 80 20 - 20 -	73.75 20.8 32.50 49.5 71.56 23.2 30.43 48.5	
90 22 - 22 - 100 28 - 28 -	70.04 24.8 25.01 43.0 69.01 26.5 22.48 41.5	
(1+1) (1+2)	66.80 -30.3 20.53 -39.2	•
Dinitrogen tetroxide ($N_2\theta_{1\mu}$) + Nitrosodiethylamine ($C_hH_{1,0}N_2\theta$)	Nitric anhydride ($N_2 \theta_5$) + Carbon tetrac $^{\circ}$ ($CC1_4$)	hloride
Addison and Conduit, 1932 (Fig.)	Lewis and Smyth, 1939	
mol% η (centistokes)	mo1% d &	
10° 0° -7° -15° -23° -28° -33° 40.0 1.0 1.2 1.4 1.7 2.2 2.5 3.1	25°	
50.6 1.2 1.7 2.0 2.5 3.0 3.7 4.4	100.000 1.5844 2.223	
61.6 1.6 1.9 2.3 3.0 3.75 4.6 5.5 67 1.65 1.95 2.35 3.05 3.9 4.7 5.55 79 1.7 2.0 2.3 2.95 3.8 4.25 5.1	94.066 .5813 .368 91.376 .5800 .435	
100 1.65 1.8 1.9 2.5 3.1 3.3 3.8	90.639 .5793 .452 89.757 .5790 .473	
mo1% ×		
10° 0° -7° -15° -23° -28° -33°	Chlorine heptoxide ($C1_20_7$) + Carbon tetra	ch1o-
40.0 2.620 2.350 2.165 1.945 1.735 1.600 1.465	ride (CCl ₁)	
50.6 .490 .155 1.925 .655 .390 1.225 1.055 61.6 .660 .285 2.025 .715 .410 1.210 1.020	Zinoviev and Rosolovskii, 1956	
72.2 .165 1.840 1.610 .355 .120 0.975 0.830	mol% f.t. E tr.t.	~~~~
	100	, , , , , , , , , , , , , , , , , , ,
	0.0 -90100 3.4 91 - 98 11.3 39 -94 100	
Dinitrogen tetroxide (N ₂ O ₄) + Nitrobenzene	17 7 72 92 100	
(C ₆ H ₅ O ₂ N)	30.6 63 91 108	
Frankland and Farmer, 1901	36.3 59 93 101	
% D b.t. % D b.t.	39.2 57 94 106 51.5 54 93 - 61.3 51 92 104	
1.85 +0.215 7.31 +0.841	76.6 49 96 105 79.4 49 94 102	
2.92 .317 9.41 1.105 4.20 .464 11.91 1.457	83.4 44 93 105	
5.48 .612 18.63 2.394	85.4 88.9 97.6 24 97.6 24 -95 47.0	
	100.0 -22.947.4	

Nitrosyl chloride (NOCl) + Benzene ($C_6 H_6$)	Phosphorus oxychloride (POCl ₃) + Chloroform (CHCl ₃)
Meisel , 1925 (fig.)	Andrieth and Steinman, 1941 (fig:)
mol% f.t.	mol% Q diss. mol% Q diss.
0 -60 2.2 -67 E 47.4 0 50 +1 (1+1)	20 375 45 470 28 430 59 420 42,9 482 65 325 44 460 72 300
Nitrosyl chloride (NOC1) + Ether ($C_{i_1}H_{1\circ 0}$)	
Meisel, 1923 (fig.)	Phosphorus oxychloride ($POCl_3$) + 1-Methyl malate ($C_6H_{10}O_5$)
mo 1% f.t.	Grossmann and Landau, 1910
20 - <u>145</u>	c* (α)
50 -156 60 -134 75 -122	red yellow green pale dark viol. blue blue
	20°
Nitrosyl chloride (NOC1) + Acetophenone (C_8H_80)	50.745 -2.63 -3.003.80 5.043 -0.71 -0.91 -1.08 -1.29 -1.37 -1.50 *c = g POCl ₃ in 100 cc
Meisel, 1923 (fig.)	
mo1% f.t.	
0 -61 16.7 -65 E 50 -10 (1+1)	Phosphorus oxychloride (POCl $_3$) + Ethyl tartrate ($C_8H_{1u}O_6$) Grossmann and Landau, 1910
	c* (α)
Nitrosyl chloride (NOCl) + Acetic acid ($C_2H_4O_2$)	red yellow green pale dark viol. blue blue
Meisel, 1923	20° 51.104 +6.34 +6.73 +6.69 +4.97 +3.70 +1.55
Rectilinear f.t. curve	25,552
Phosphorus oxychloride (POCl ₃) + Benzene (C ₆ H ₆)	2.523 +1.19 +2.77 +0.40 -2.38 -3.96 -
Traube, 1895	
% d	
20°	
100,000 0.88235	
97.764 .89213 94.201 .90718	
90.545 .92411 71.039 1.02167	
68.362 1.03678	
	<u> </u>

Thionyl chloride ($SOCl_2$) + Cyclohexane (C_6H_{12})	Thionyl chloride ($SOCl_2$) + Xylene (C_8H_{10})
Locket, 1932	·
mo1% d n mo1% d n	Locket, 1932
25°	mol% d n
100,0 0.7739 882,4 19.4 1.4018 618.3	25°
72.8 0.9410 720.1 6.3 .5452 615.6 53.4 1.0832 663.4 0.0 .6284 619.4	100.0 - 606.7 74.2 0.9859 641.9 48.9 1.1500 657.2 21.1 .3891 651.5
mol% Q mix. mol% Q mix.	0.0 .6284 619.4
87.9 -117.0 24.4 -178.1 78.4 182.6 20.7 157.2 70.7 214.1 16.3 131.1	mol% Q mix. mol% Q mix.
64.5 235.4 11.3 96.2 59.2 _244.6 5.9 _53.7	85.8 94.8 22.3 140.8 75.2 142.3 18.7 123.6 66.9 175.7 14.7 101.1 60.3 192.0 10.3 73.8
	60.3 192.0 10.3 73.8 54.8 201.5 5.4 40.5
Thionyl chloride ($SOCl_2$) + Benzene (C_6H_6)	
Locket, 1932	Thionyl chloride ($SOCl_2$) + Mesitylene (C_9H_{12})
mol% d n mol% d n	
25° 100.0 - 596.1 31.4 1.3585 606.8	Locket, 1932
100.0 - 596.1 31.4 1.3585 600.8 81.9 0.9895 596.2 12.3 .5172 616.5 63.4 1.1161 599.9 0.0 .6284 619.4 51.9 1.2011 602.0	mo1% d η mo1% d η 25°
14 0	100 0.8611 651.8 42.9 1.1751 693.9 76.6 0.9674 685.0 25.7 .3236 677.0
mol% Q mix. mol% Q mix.	68.6 1.0099 690.8 10.0 .4925 649.5 56.8 1.0811 695.2 0.0 .6284 619.4
89.6 + 34.0 28.1 78.2 81.0 55.5 23.7 70.7 74.0 70.6 19.0 60.5	mol% Q mix. mol% Q mix.
68.0 81.2 13.3 45.5 62.7 87.7 7.1 +26.2	83.5 121.6 20.3 159.0
	71.8 180.0 16.9 136.9 62.6 208.0 13.3 111.3
Thionyl chloride ($SOCl_8$) + Toluene (C_7H_8)	55.6 220.0 9.2 79.9 50.2 222.5 4.7 43.3
Locket, 1932	
	Thionyl chloride ($SOC1_2$) + Chloroform ($CHC1_3$)
1 mo1% d η mo1% d η	
100.0 - 546.0 28.0 1.3544 622.3	Andrieth and Steinman, 1941 (fig.)
73.9 1.0116 583.2 19.8 .4278 625.0 57.4 .1214 601.9 7.7 .5460 623.6	mol% Q mix. mol% Q mix.
44.1 ,2206 613,9 0.0 ,6284 619.4	3°
mol% Q mix. mol% Q mix.	20 120 52 98 32.8 112 57 70 40 120 60 75
87.4 +65.7 24.4 +118.6	50 120
77.6 110.4 20.6 104.9 69.8 135.2 16.3 87.1 63.4 151.3 11.5 65.2 58.1 +159.0 6.0 +37.2	

Thionyl chloride ($SOCl_2$) + Ethyl ace ($C_{\rm h}H_{\rm g}\theta_2$)	31	Sulfuryl	chloride	(SO ₂ Cl ₂) +	Cyclohexar (C ₆ H ₁₂)	ie
Laghat 1092	1_	Locket,	1932			
Locket, 1932 mo1% d η mo1% d	n -	mo1%	đ	η		
25° 100.0 - 426.8 30.0 1.3615 77.5 1.0283 491.1 17.0 .4719 68.4 .0854 517.4 0.0 .6284 46.6 .2346 575.9	611.7 617.7 619.4	100 67.9 35.3 20.3	25° 0.773 0.995 1.27 1.41 1.657	56 730.3 17 677.0 13 669.5		
mol% Q mix. mol% Q mix.		mo1%	Q mix.	mo 1%	Q mix.	
88.7 132.1 25.9 249.0 79.7 207.0 21.9 220.9 72.5 255.6 17.3 184.7 66.4 288.0 12.2 139.6 61.3 308.1 6.4 78.5		88.4 79.2 71.5 65.2 60.0	-106.7 171.0 209.5 230.2 -242.5	27.2 22.9 18.0 12.7 6.7	-188.7 166.6 139.2 104.0 -59.3	
Thionyl chloride ($SOCl_2$) + Ethyl ma ($C_8H_{1\mathrm{le}}O_5$	11			(S0 ₂ C1 ₂) +	Benzeno (C ₆ H ₆)
Ionesen, 1913	1 -	Locket,	1932			·
mo1% f.t.		mol%	d	η mo1% 25°	d	<u> </u>
0 -38 3.27 -90 8.34 -84		82.4 57.0 30.1		517.2 26.6 546.3 15.5	.5247	669.1 675.7 685.0
11.41 -74	-	mo1%	Q mix.	mo 1%	Q mix.	· · · · · · · · · · · · · · · · · · ·
		90.2 81.8 75.2 69.6	+9.9 16.6 21.1 +22.7	21.9 15.4 8.2	+14.0 10.7 +5.7	
		Sulfury		e (S0 ₂ C1 ₂) +	- Toluene (С ₇ Н _в)
	-	mo1%	d	η mo1%	d	η
		79.3 62.7 42.8	0.9910 5 1.1073 6 1.2615 6	25° 584.1 28.7 614.4 17.4 645.7 0.0	1.3805 .4844 .6573	664.2 675.9 685.0
		mo1%	Q mix.	mo 1%	Q mix.	
		87.3 78.2 70.4 63.9	22.0 35.2 42.0 46.0	23.7 19.0 13.5 7.3	35.3 30.4 23.5 13.6	

Sulfuryl chloride (SO_2CI_2) + Xylene (C_8H_{10})	Nitric acid ($ ext{HNO}_3$) + Chloroform ($ ext{CHCl}_3$)
Locket, 1932	Desmaroux, Chedin and Dalmon, 1939
mo1 % d η	Raman frequencies
25∘	0 % 70 %
79.1 0.9727 641.3 47.5 1.1891 680.5 22.1 .4153 696.3 9.3 .5477 693.7 0.0 .6573 685.0	608 (m) 611 674 (m) 671 922 (s) 912 1295 (vs) 1303 1672 (m) 1676 3300 3300 (large OH band)
mol% Q mix. mol% Q mix.	m = middle
87.5 23.5 16.4 30.0 77.7 36.9 11.7 25.9 69.9 45.7 6.1 18.6	s = strong vs = very strong
Sulfuryl chloride (SO_2Cl_2) + Mesitylene(C_9H_{12})	Nitric acid (HNO_3) + Ether ($C_4H_{10}O$) Desmaroux, Chedin and Dalmon, 1939
	Raman frequencies
	0 % 70 %
25° 100.0 0.8611 651.8 35.5 1.3388 702.8 82.8 - 673.5 33.1 - 702.5 67.7 - 688.5 19.6 - 697.6 65.9 1.0758 - 0.0 1.6573 685.0 48.5 - 699.7	608 (m) 630 674 (m) 685 922 (s) 935 1295 (vs) 1300 1672 (m) 1666
mol% Q mix. mol% Q mix.	m = middle
86.0 47.4 60.4 65.9 75.5 60.8 5.2 25.5	s = strong vs = very strong
67.1 64.6	
	Nitric acid ($ ext{HNO}_8$) + $ ext{Benzaldehyde}$ ($ ext{C}_7 ext{H}_6 ext{O}$)
Sulfuryl chloride ($S0_2Cl_2$) + Chloroform (CHCl $_3$)	Zhukov and Kasatkin, 1909
Andrieth and Steinman, 1949 (fig.)	mol% f.t. mol% f.t.
mol% Q mix, mol% Q mix,	69.0 -16.5 52.6 +4.3 68.7 16.1 50.7 5.3 67.1 13.7 50.0 5.4 (1+1)
15 150 40 169 25 168 47 166 31 166 62 125	67.1 13.7 50.0 5.4 (1+1) 65.5 11.2 48.2 5.2 64.3 9.5 46.4 4.7 60.4 3.8 45.1 3.9 58.1 -0.7 43.3 +2.5 55.0 +2.5 39.2 -2.9 53.2 +3.9 34.0 -11.0

Nitric acid ($ ext{HNO}_3$) + Camphor ($ ext{C}_{10} ext{H}_{16} ext{O}$)	Nitric acid ($N0_2H$) + Acetic acid ($C_2H_{14}O_2$)
Zhukov and Kasatkin, 1909	Briner, Susz and Favarger, 1935
mol% f.t. mol% f.t.	% f.t. % f.t.
70.00 +2.0 60.50 11.2 67.70 2.0 59.50 14.0 67.60 2.0 57.00 18.6 67.10 2.1 55.30 21.2	100 +17 46 -45.5 76 -12 26 -47.5 63.5 -27.5 0 -41.5
66.80 2.2 52.70 23.3 66.67 2.2 (1+2) 51.60 23.7 66.00 1.6 50.90 23.9 65,50 1.0 50.20 24.0	Miskidzhyan and Trifonov, 1947
65,20 0.5 50.00 24.2 (1+1) 64,60 0.0 E 48.00 23.6	mol% f.t. mol% f.t,
64,30 0.6 46.50 23.0 64.00 1.2 43.40 20.5 63.60 2.4 40.10 16.2 62.70 5.0 36.40 10.2 Nitric acid (HNO ₃) + Nitrobenzene (C ₆ H ₅ NO ₈)	100 +16.6 52 -25.0 90 +6.7 50 -24.6 (1+1) 80 -8.4 40 -28.6 75 -20.8 30 -43.1 66.7 -42.6 20 -59.1 60 -32.9 10 -47.1 55 -26.2 0 -41.1
Gladstone and Hibbert, 1897	Taylor and Follows, 1951
% specific refraction	mo1% f.t. mo1% f.t.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	100.00 16.6 50.16 -23.9 80.45 -6.8 38.28 -30.6 (1+1) 72.88 -24.9 29.55 -45.9 67.43 -41.1 13.26 -49.9 59.58 -30.0 0.00 -41.6
Nitric acid ($N0_3H$) + Acetic anhydride ($C_4H_60_3$)	Briner, Susz and Favarger, 1935
	% d % d
Malkova, 1954 mol% d mol% d O°	24.9° 100
100.00 1.1011 47.96 1.3072 94.38 .1167 41.04 .3453 92.45 .1245 33.15 .3943 89.88 .1327 25.32 .4515 85.03 .1484 20.11 .4881 77.16 .1751 17.40 .5028 69.89 .2025 14.96 .5122	Miskidzhyan and Trifonov, 1947
64,99 .2231 9.92 .5200 60,00 .2473 0.00 .5465	0° 20° 40°
54.18 .2763	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Titov, 1954	Miskid	zhyan and	Trifonov, 1	.947	
vol% d vol% d	mo 1%		σ		
		0°	20 °	40°	
25° 100	100 80 66.7 60 55 50 40 30 10	32.46 34.06 35.15 35.91 36.50 38.10 39.02 42.13 43.56	35.57	25.8 28.1 29.6 30.3 31.1 31.7 32.9 34.2 36.1 37.7	8 9 5 2 0 7 7 3
Malkova, 1954	mo 1%	n _D		mo 1%	n _D
vo1% d vo1% d	11.02	5° −D	35°	5 2/	5° 35°
0.00 1.0708 53.90 1.3499 10.11 .1260 57.04 .3642 10.13 .1270 59.60 .3758 20.08 .1808 62.98 .3905 29.91 .2320 66.02 .4042 39.83 .2822 69.99 .4211 44.76 .3065 74.90 .4419 47.82 .3213 80.15 .4624 50.85 .3358 100.00 .5468	100 80 66.7 60 55	1. 3849 . 3909 . 3932 . 3949	1.3636 .3768 .3816 .3837 .3849	50 40 30 10 0	1.3963 1.3867 .3990 .3881 .4007 .3899 .4017 .3907 .4030 .3910
		and Follow		mol %	
Briner, Susz and Favarger, 1935	mol	<u>%</u>	н	mo1 %	ų
24.9° 100 1234 46 1745 76 1835 26 1275 57 1837 0 761 Miskidzhyan and Trifonov, 1947	0.0 6.0 12.2 16.6 20.8 26.3 31.7 34.9 44.2 57.7 61.6	28 52 35 54 74 24 29	0° 359.3 204.3 130.3 100.5 86.29 72.85 58.95 50.69 27.97 12.79 8.369 5.624	63.19 66.47 67.76 70.83 70.92 72.39 72.84 75.74 76.12 79.83 83.05	4.705 3.186 2.668 1.826 1.815 1.479 1.360 0.906 0.822 0.448 0.247
101	01.0	,,,	25°		
0° 20° 40° 100 1757 1183 818 80 2094 1716 1063 66, 3 3538 1950 1189 60 3585 1965 1205 55 3546 1942 1193 50 3397 1895 1166 40 2926 1703 1088 30 2284 1448 970	53.2 57.5 62.2 66.0 67.7 68.2 70.7 70.8 70.9	29)1 76 20 73 33 72	22, 33 15, 16 9, 538 6, 379 5, 668 4, 967 3, 621 1, 826 1, 815 1, 479 1, 360	73.35 74.50 75,30 75.74 76.12 79.83 83.05 85.21 92.17 94.58 97.00	2.680 2.256 2.006 0.906 0.822 0.448 0.247 0.3948 0.0792 0.0320 0.00695
10 1428 1071 714 0 1223 946 715	0.0 3.6 8.5 15.19. 24.5 25.4 28.32.37.6 41.45.6	045 996 18 39 94 49 81 81 84 02	40° 373.9 285.2 178.9 132.2 119.5 108.0 106.4 98.55 86.95 73.72 58.51 45.98	49.81 54.07 69.24 72.49 75.03 77.18 78.93 80.56 80.94 88.15 93.16 95.97	35.06 25.33 5.987 4.118 2.963 2.222 1.681 1.360 1.069 0.286 0.0696 0.0234
_	=====				

Perchlor	ic acid (HC10 ₁₁) + 1	Acetic acid	1 (CaH.Oa)	mo1%	20°	n 35∘	60°	
		•		. (Cgm ₄ Cg)	5.60 12.95	543 796	413 631	450	
Usanovic	in and Suma	rokova, 19	47		22.25 30.10	127 1859	958 13 3 3	652 839	
mo1%		d			37.26	27 18	1859	114	
	20°	35°	50°		47.69 57.39	4462 7350	2797 4147	1971	
0.00 17.05 28.08 36.05 48.83	1.7716 .7253 .6799 .6463 .5746	1.7016 .6601 .6254 .5599	1.7312 .6794 .6391 .5395		57, 39 63, 28 67, 27 76, 66 82, 33 95, 36	89 19 11280	4796 5772 5881	2160 24-11 2365 2305 1607	
55.16 67.46 79.71 87.86	.5322 .4293 .3069 .2132	.5153 .4135 .2930 .1999	.4959 .3986 .2778 .1883		mo 1%	20°	и 35°	60°	
95.35 100.00	, 1176 -	.0991	.0859		5.60 12.95 22.25	348.3 526.1 522.3 493.3	371.2 599.4 636.0	677.7 753.0	
mo1%	20°	1] 35°	50°		30.10 37.26 47.69	391.9 245.1	611.1 504.2 337.0	777.8 722.5 490.9	
6.06 17.05 28.08 36.05 48.83 55.16	565 1140 2900 5903 23878 40805	477 900 2140 3970 12262 18832	416 730 1583 2694 6853 9770		57.39 63.28 67.27 76.66 82.33 95.36	143.6 112.2 85.0	213.3 178.7 141.0 84.9	352.5 300.8 252.2 156.4 137.0 24.3	
67.46	61933	26032	12680						
79.71 87.86 95.35	26534 7112 1713	11457 5627 1224	6070 2492 892		Perchlor	ic acid (HC10 _u) + D	ichloracetic ac	id
mo1%		и					· · · · · · · · · · · · · · · · · · ·		
	20°	35∘	50°				(C ₂ H ₂ O ₂ C1 ₂)	
0.00	25,6	35°	542.7		Sumaroko	va and Usa			
0.00 6.06 17.05 28.08 36.05	25.6 433.4 484.5 362.7 245.6	35° 492.8 584.8 476.9 335.6	542.7 675.7 591.9 427.3 236.1		Sumaroko mo1%	ova and Usa			
6.06 1 7. 05	25.6 433.4 484.5	35° 492.8 584.8 476.9	542.7 675.7 591.9 427.3	(1+2)	3.51 13.51 20.48 31.25 43.24 49.64	20° 1.7663 .7431 .7273 .7046 .6825 .6629	1.7372 .7164 .6814 .685 .4653	60° 1.7079 .6875 .6754 .6530 .6310 .6206	
6.06 17.05 28.08 36.05 48.83	25.6 433.4 484.5 362.7 245.6 87.5 52.9 34.5 47.2	35° 492.8 584.8 476.9 335.6 147.8 99.5 72.0 92.5 113.3	542.7 675.7 591.9 427.3 236.1 168.1 131.8 152.5 159.9 88.7	(1+2)	3.51 13.51 20.48 31.25 43.24 49.64 61.59 75.68	20° 1.7663 .7431 .7273 .7046 .6825	1.7372 .7164 .7043 .6814 .6585	60° 1.7079 .6875 .6754 .6530 .6310	
6.06 17.05 28.08 36.05 48.83 55.16 67.46 79.71 87.36 95.35	25.6 433.4 484.5 362.7 245.6 87.5 52.9 34.5 47.2 67.3 45.1	35° 492.8 584.8 476.9 335.6 147.8 99.5 72.0 92.5 113.3 64.2 HClO _h) +	542.7 675.7 591.9 427.3 236.1 168.1 131.8 152.5 159.9 83.7 (1+1)	cetic acid	3.51 13.51 20.48 31.25 43.24 49.64 61.59	1.7663 .7431 .7273 .7046 .6825 .6629 .6436 .6037	novich, 19 d 35° 1.7372 .7164 .7043 .6814 .6585 .4653 .6203 .5821	1.7079 .6875 .6754 .6530 .6310 .6206 .5966	
6.06 17.05 28.08 36.05 48.83 55.16 67.46 79.71 87.36 95.35	25.6 433.4 484.5 362.7 245.6 87.5 52.9 34.5 47.2 67.3 45.1	35° 492.8 584.8 476.9 335.6 147.8 99.5 72.0 92.5 113.3 64.2 HClO _h) +	542.7 675.7 591.9 427.3 236.1 168.1 131.8 152.5 159.9 83.7 (1+1) Monochlora C ₂ H ₃ O ₂ C1	cetic acid	3.51 13.51 20.48 31.25 43.24 49.64 61.59 75.68 91.58	20° 1.7663 .7431 .7273 .7046 .6825 .6629 .6436 .6037 .5690	1.7372 .7164 .7043 .6814 .6585 .4653 .6203 .5821 .5499	60° 1.7079 .6875 .6754 .6530 .6310 .6206 .5966 .5603 .5306	
6.06 17.05 28.08 36.05 48.83 55.16 67.46 79.71 87.36 95.35	25.6 433.4 484.5 362.7 245.6 87.5 52.9 34.5 47.2 67.3 45.1	35° 492.8 584.8 476.9 335.6 147.8 99.5 72.0 92.5 113.3 64.2 HC10 ₁) +	542.7 675.7 591.9 427.3 236.1 168.1 131.8 152.5 159.9 83.7 (1+1) Monochlora C ₂ H ₃ O ₂ C1	cetic acid	mo1% 3.51 13.51 20.48 31.25 43.24 49.64 61.59 75.68 91.58 mo1% 3.51 13.51 20.48	20° 1.7663 .7431 .7273 .7046 .6825 .6629 .6436 .6037 .5690 20°	1.7372 .7164 .7043 .6814 .6585 .4653 .6203 .5821 .5499	60° 1.7079 .6875 .6754 .6530 .6310 .6206 .5966 .5603 .5306	
6.06 17.05 28.08 36.05 48.83 55.16 67.46 79.71 87.36 95.35	25.6 433.4 484.5 362.7 245.6 87.5 52.9 34.5 47.2 67.3 45.1	35° 492.8 584.8 476.9 335.6 147.8 99.5 72.0 92.5 113.3 64.2 HC10 ₁) +	542.7 675.7 591.9 427.3 236.1 168.1 131.8 152.5 159.9 83.7 (1+1) Monochlora $C_2H_3O_2C1$	cetic acid	mo1% 3.51 13.51 20.48 31.25 43.24 49.64 61.59 75.68 91.58 mo1%	20° 1.7663 .7431 .7273 .7046 .6825 .6629 .6436 .6037 .5690 20°	1.7372 .7164 .7043 .6814 .6585 .4653 .5203 .5821 .5499	60° 1.7079 .6875 .6754 .6530 .6310 .6206 .5966 .5603 .5306	

	Boric acid ($B0_3H_3$) + Methyl alcohol ($CH_{14}O$)
mo1% к 20° 35° 60°	P.P.Kosakewitsch and M.S.Kosakewitsch, 1933
0 59.6 3.31 139.6 143.1 143.5 13.51 248.9 250.4 243.5 20.48 258.7 262.0 261.8 30.25 217.7 232.0 235.4 43.24 124.8 137.9 148.7 49.64 82.8 95.8 106.2 61.59 31.9 39.3 48.8 75.68 7.2 10.5 13.6 91.58 1.2 1.8 2.6	mo1% d 12° 100 0.797 23.30 97.33 .821 24.44 94.23 .847 25.20 91.65 .868 25.88 Boric acid (BO ₃ H ₃) + Glycerol (C ₃ H ₈ O ₃)
Perchloric acid ($^{\circ}$ HClO $_{4}$) + Trichloracetic acid ($^{\circ}$ C $_{2}$ HO $_{2}$ Cl $_{3}$)	Hooper, 1883 c* f.t. c* f.t.
Sumarokova and Grishkin, 1946	20 24 50 60 24 10 56 70 28 20 61 80 33 30 67 90 38 40 72 100
20° 50° 60° 0,00 1,7716 1,7312 - 8.82 .7528 .6934 1,6691 20,29 .7348 .6756 .6560 27,76 .7230 .6680 .6490 45,61 .7033 .6540 .6355 57,75 .6980 .6465 .6260 67,81 .6910 .6420 .6210 76,26 .6880 .6393 .6177	### 44 50 c*= g BO ₃ H ₅ in 100 cc glycerol Boric acid (BO ₃ H ₃) + Glucose (C ₆ H ₁₂ O ₆) Mehta and Kantak, 1946 mol% f.t.
mo1% η 20° 50° 60°	0 170 54.2 E 51.7
20.29 1335 893 793 27.76 1654 1059 916 45.61 - 1652 - 1511 57.75 - 2348 1993 67.81	Boric acid (BO_3H_3) + Galactose ($C_6H_{12}O_6$) Mehta and Kantak, 1946 mol% f.t.
mo1% % 20° 50° 60°	0 50.7 E 170 50.0
8.82 51.1 17.7 79.6 20.29 36.3 44.9 56.6 27.76 25.6 34.8 42.5 45.61 6.2 14.5 21.7 57.75 2.4 7.6 - 76.26 0.5 4.2 9.8	Boric acid (BO ₃ H ₃) + 2-Acetyl-l-naphthol (C ₁₂ H ₁₀ O ₂) Neelakantam, Narayanan and Sitaraman, 1947 \$\frac{100}{5} \text{ f.t.} \frac{102}{(3+1)} \text{ 220} \\ 0 \text{ 170} \text{ 170} \text{ 170} \text{ 170} \text{ 170} \text{ 170}
	100 102

	Phosphorous acid ($P0_3H_3$) + Dioxane ($C_4H_80_2$)
Boric acid (BO ₃ H ₃) + Resorcylaldehyde	Thosphorous acta (103 ng /) Droxane (Cungo 2)
(C ₇ H ₆ O ₃)	Mezhennii , 1949
Neelakantam, Narayanan and Sitaraman, 1947	mol% f.t. mol% f.t.
% f.t.	0.0 72.31 63.75 6.0
100 135	12.56 56.1 69.99 6.8 16.42 49.0 74.20 7.34
(3+1) 0 170	20.79 41.0 75.03 7.92 22.20 36.1 83.25 8.31
	29.98 22.5 84.20 9.19 32.90 3.7 86.10 9.35
	47.80 -11.5 89.00 9.79 53.49 -4.0 90.00 10.11
Boric acid ($B0_3H_3$) + Gallacetophenone ($C_8H_80_4$)	53.79
Neelakantam, Narayanan and Sitaraman, 1947	63.50 +4.0
% f.t.	
100 171	Phosphoric acid ($P0_{14}H_3$) + Ether ($C_{14}H_{10}0$)
(2+3) 182 (4+1) 195	
170	Rabinovitsch and Jakubsohn, 1923
	% f.t. % f.t.
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Boric acid ($B0_3H_3$) + Resacetophenone ($C_8H_8O_3$)	2.07 28.7 11.90 25.2 2.15 28.3 11.95 24.5
	2.80 26.5 12.24 23.9 3.83 23.4 12.30 25.0
Neelakantam, Narayanan and Sitaraman, 1947	4.90 21.0 12.52 25.2 7.50 17.7 13.00 27.5
	7.65 17.5 13.81 28.4 8.30 16.9 15.04 29.8
100 143 (4+1) 196	9.90 16.0 15.62 30.0 10.15 17.5 15.80 29.3
170	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	11.06 27.5 (6+1) (4+1)
Boric acid ($B0_3\mathbf{H}_3$) + Tartaric acid ($C_4\mathbf{H}_60_6$)	Plotnikov, 1905
National World 1016	% н % н
Mehta and Kantak, 1946	25°
mo1% f.t.	9,29 318.0 50.3 5.29 11.76 263.0 50.5 5.07
0 170 48.5 E 51.5	12.02 258.0 52.6 4.23 14.15 211.4 56.7 2.83
complex ? 62.0	17.19 159.2 59.2 2.18 21.95 99.1 61.65 1.86
	23.82 84.6 65.2 1.28 25.31 69.9 66.6 1.22 29.54 45.7 68.9 0.972
	30.40 42.2 74.3 .561 34.50 27.5 74.5 .546
	41.01 13.9 77.6 .376 43.90 10.47 84.1 .135
	45.90 8.38 85.4 .112 47.40 7.28 87.3 .0736

Phosphoric acid (PO _h H ₃) + Benzaldehyde (C ₇ H ₆ 0)	Phosphoric acid ($PO_{4}H_{3}$) + Benzophenone
King and Walton, 1931	(C _{1x} H ₁₀ O)
% f.t. % f.t.	King and Walton, 1931
0.0 42.3 44.5 40.7 14.0 34.2 45.1 42.6	% f.t. % î.t.
16.2 32.0 52.0 43.0 23.5 24.9 52.6 42.2 24.0 23.7 55.3 42.0 28.7 24.0 59.2 40.2 33.8 31.4 65.0 36.3 34.6 33.6 69.3 34.1 37.5 36.0	0 · 42.3 53.4 68.8 2.4 39.5 55.8 68.9 4.7 39.0 57.0 70.2 6.4 38.5 60.0 70.9 8.5 37.9 63.0 71.3 10.7 37.5 64.4 71.3 12.0 36.7 67.5 71.0 14.0 36.3 67.0 71.2 15.8 35.8 69.4 70.8
(1+1)	17.7 34.9 72.0 70.4
Phosphoric acid ($P0_4H_3$) + Anisaldehyde ($C_8H_8O_2$)	23.1 32.5 75.7 69.6 25.7 30.1 75.9 70.2 28.7 28.5 78.7 69.1 34.1 59.1 78.9 69.0 35.3 57.7 81.9 67.8 36.6 61.0 81.9 66.5 42.4 62.9 83.7 67.0 43.7 64.4 87.4 65.9 47.6 66.1 90.2 63.4
King and Walton, 1931 % f.t. % f.t.	50.6 67.4 95.9 58.6 (1+1)
0.0 42.3 43.9 74.8	% f.t. II % f.t. II
7.7 36.7 48.0 80.5 9.5 34.5 51.5 81.7 15.3 27.5 53.9 83.4 20.0 26.0 56.4 83.4 23.0 40.3 60.0 83.6 24.0 47.6 61.0 83.2	81.9 43.8 98.3 47.2 85.8 48.4 98.7 47.8 93.2 46.9 100.0 48.0
26.0 52.0 67.0 81.2 27.1 52.6 67.5 81.5 32.0 58.0 70.0 80.9 34.0 63.0 78.0 76.9 40.3 71.0 82.4 73.7	Phosphoric acid ($P0_{14}H_{3}$) + Coumarin ($C_{9}H_{6}0_{2}$)
(1+1)	King and Walton, 1931
	% f.t. % f.t.
Phosphoric acid ($P0_{4}H_{3}$) + Acetophenone ($C_{8}H_{8}0$)	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
King and Walton, 1931 % f.t. % f.t.	9.3 32.3 69.4 119.0 11.2 30.9 71.9 108.1 12.9 29.3 73.9 107.1 15.6 26.6 77.2 105.0
% f.t. % f.t. 0 42.3 58.9 87.8 0.8 40.6 66.9 85.2 4.2 39.0 70.0 83.8 7.2 37.5 71.6 83.5 7.5 36.9 77.9 80.1 16.4 44.8 82.4 77.9 24.0 55.7 87.7 74.5 35.6 73.0 96.1 56.9 40.0 79.3 97.6 52.9 44.1 81.5 98.1 18.7 47.7 87.3 100.0 18.3 53.7 87.9 87.9	15.6 20.0 77.2 105.0 17.8 27.7 85.6 99.7 20.0 40.8 88.2 97.7 21.6 54.8 90.8 93.8 22.8 63.7 95.3 86.0 31.2 84.6 97.6 73.3 37.2 95.9 98.3 67.9 43.5 104.9 99.0 68.1 49.5 109.7 100.0 68.8 (1+1)
(1+1)	

0.4									
Phosphori	c acid (PO ₁₄ H ₃) +	Camphor (C.	оН ₁₆ 0)	Phos	phoric acid	1 (PO ₄ H ₃) + Propionic a (C ₃ H ₆ O ₂)	cid
Zhukov ar	nd Kasatki	n, 1909			Kinor a	nd Walton,	1931		
mo 1%	f.t.	mo1%	f.t.		%	f.t.	%	f.t.	
67.1 61.2 54.5 51.9 51.0 50.0	37.0 30.6 26.6 27.1 28.4 29.2 (1+1)	48.1 46.1 44.6 41.5 39.2	28.3 26.8 26.0 28.1 31.0		0.0 9.4 15.5 17.6	42.3 33.2 26.3 20.3	21.9 25.4 27.0 29.6	12.7 6.2 2.0 -2.0	
Phosphor		(PO ₄ H ₅) +	Phenol (C ₆	H ₆ O)	•	oric acid		+ Butyric acid ($C_4 H_8 O_2$)	
King and	Walton,	1931			%		f.t.		
King and	f.t.	%	f.t.		0.0		42,3		
6.6 18.9 26.9 36.5	67.5 70.2 70.3 70.3	44.3 55.0 63.5	70.3 69.9 69.4		12.3 22.2 30.0		34.2 25.8 16.5		
		(1+	- Guaiacol (С ₇ Н ₈ О ₂)	Phosp	horic acid	(PO ₄ H ₃)	+ Caproic acid	
				į	King	and Walton,	1931		
	Walton,				%	f.t.	%	f.t.	
0.0 18.9 26.2 32.0 41.3 48.5 55.1	42.3 37.0 34.3 31.3 24.1 15.5 12.0	65,4 74,6 84,2 91,0 96,0 100,0	20.9 24.5 26.5 26.9 27.3 27.5		6.2 11.4 20.0 27.5	40.9 39.9 38.2 35.8	33,6 38.5 43.3 46.1	32.8 30.4 23.0 24.0	
Phospho	ric acid	(PO [#] H ²)	+ Acetic aci	d (C ₂ H ₄ O ₂)	Phospl	noric acid	(P0 ₁₄ H ₃)	+ Pyruvic acid ($C_3H_h0_3$)	
					King	and Walton,	1931		
	d Walton,		£ 4		- %	f.t.	8	f.t.	
0.0 9.2 14.1 15.1 20.0 22.6 25.2 26.9	14.8 14.0 18.9 21.7 25.6 27.9	32.5 35.6 36.4 42.6 43.3 49.0 57.4 62.0	32.7 32.7 33.8 31.6 32.7 30.3 23.0 14.5	1)	0.0 12.4 17.1 22.9 29.6 30.9 37.3	42.3 28.0 21.5 16.6 24.0 26.4 33.6	38.3 45.7 47.1 54.3 61.1 70.0 75.7	34.4 36.4 35.8 35.2 33.7 30.6 26.5	
27.5	29.6								

Phosphoric acid ($PO_{ij}H_{3}$) + Benzoic acid ($C_{7}H_{5}\tilde{u}_{11}$)	Sulfuric acid ($ m H_2 SO_{14}$) + Carbon dioxide ($ m CO_2$)						
King and Walton, 1931	francis, 1954						
% f.t. % f.t.	[₹] £ L ₂						
0.9 44.0 12.8 113.8 1.9 73.0 15.1 115.5 2.9 84.0 17.4 115.8 3.7 92.7 79.5 116.4 4.6 98.0 82.8 116.5	6 99.9 25						
5.7 101.3 84.6 116.9 7.4 106.0 94.0 119.0 10.0 112.0 100.0 122.3	Sulfuric acid (H_2SO_4) + Ether ($C_4H_{10}O$)						
	Porter, 1915 and 1919						
Phosphoric acid ($PO_{i_0}H_{i_0}$) + Phenylacetic acid	mol% p/p ether mol% p/p ether						
(${\sf C_8H_8O_2}$) King and Walton, 1931	0 40 0 80 0.79 50 0.05 90 0.91 60 0.37 100 1.00 70 0.62						
% f.t. % f.t.							
13.0 45.1 55.3 64.2 21.0 50.7 72.2 68.3 31.9 56.2 82.7 70.2 35.1 58.1 81.4 72.0 40.0 60.0 100.0 76.7 47.0 62.0	Campbell, 1915 5 p % p						
Phosphoric acid (PO _{l4} H ₃) + Monochloracetic	30° 0 0 68.76 455.1 41.59 34.8 76.90 554.4 54.51 192.2 97.13 631.8 56.35 229.7 100.00 642.1						
acid (C ₂ H ₃ O ₂ Cl)	Warrange and Walange and American						
King and Walton, 1931 % f.t. % f.t.	Kurnakov and Voskresenskaya, 1936 mol% Dv(cc/mole) mol% Dv(cc/mole)						
0.0 42.3 46.0 46.6 4.0 38.8 48.4 47.4 13.5 32.1 53.6 49.7 23.1 26.6 56.6 50.8 34.0 38.4 56.8 50.6 38.5 41.1 64.7 52.2 40.0 43.4 68.4 54.2 41.5 44.3 74.0 55.0	20° 14.3 5.6 57.0 7.0 20.0 7.6 66.0 6.0 43.5 8.0 81.7 3.0 48.2 7.7 84.3 3.1 53.1 7.6 94.5 1.4						
	Campbell, 1915						
	% d % d						
	30° 0 1.8240 64.12 0.9814 1.37 .7951 67.12 .9537 5.02 .7295 73.30 .8980 17.47 .5263 81.87 .8275 35.42 .2939 84.65 .8060 44.77 .1809 89.00 .7745 48.01 .14585 96.375 .7247 53.98 .08165 100 .7019 56.16 .0593						

SULFURIC ACID + DIOXANE

					∭ บ	sanovic	h, 1934				
					1	76	mo1%		и		
Sabinir	na, 1933								25	o ——————	
% 	0°	d 10°	20°	30°	11	00 72.56 65.58	100 77.78 71.60	$0 \\ 1.8 \\ 3.3$	0 2 5	.7 .4	
0.00 3.90 5.50 7.58 15.74 16.47 18.30 25.75 33.75 34.19 38.67 39.80 41.79 43.01 46.87 51.75 78.22 85.70	1. 8530 .8033 .7846 .7546 .6365 .6220 .5938 .5005 .4115 .4885 .3597 .3472 .3235 .2659	1.8470 .7752 .6267 .5782 .4948 .4017 .2967 .2967 .2010 0.9375 .8630 .4248	1.8361 .7653 .6190 .5703 .4645 .3945 	1.8276 .7564 .6101 .5623 .4720 .3863 - .2800 .2420 .1863 0.9920 .8420 .7019		58,55 52,58 47,61 38,77 37,01 31,88 22,9,95 23,35 22,83 21,23 17,19 12,22 11,39 7,61 3,47 0,00	55. 17 59. 49 54. 63 45. 60 43. 76 38. 27 36. 15 28. 74 28. 74 21. 47 15. 57 14. 57 9. 86 9. 24 4. 54 0. 00	5.1 10 23 75 87 137 140 250 265 276 376 458 480 443 469 367 50		, 3	
	0°		7 20°	30°	— к	urnakov	and Voskr	esenskaj	ya, 1936		
					m	101%	Q mix.	U	mo1%	Q mix.	υ
0.00 3.90 5.50 7.58 10.74 16.47 18.30 25.75 33.95 34.19	45340 38170 27870 28050 30530 34950 37500	43370 29990 22340 22320 25310 24950 29190	30530 21690 16950 17410 19090 21040 22850	20410 15400 12870 13020 15400 15790 16720	1 2 3 4 5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	872 1758 2409 3060 3441 3524	20° 0.540 .513 .485 .460 .436 .436 .406 .398	60.8 64.5 70 80 90	3592 3511 3412 2301 1170	0.383 .373 .370 .360 .348 .332
38.67 39.80 41.79 43.01 46.87 51.75 56.55 78.21 85.70	35810 35750 35200 31300 15730 2620 680	28160 26370 19600 13240 2340 610	20230 19660 15260 10400 2030 550	16220 14570 11480 8940 1670 510			c acid (H		→ Dioxane	(С ₄ Н ₈ 0	2)
					=-	mo 1%	f.t.		mo1%	f.t.	
Bailey mol%	7 , 193 6 o 17 °	mo1%	ە 1 7 °	9.5°		0 8 14 20 25 35 39	10.7 8 5 20 52 70 83	;	43 50 54 59 64 70	92 101 80 70 40 23	(1+1)
0 0.5 1.0 1.5 2.0 3.0 4.0 5.0 20.0 25.0 40.0	50, 33 49, 40 48, 75 48, 24 47, 83 47, 22 46, 93 46, 86 46, 83 46, 80 41, 60	60 80 90 93 95 96 97 98 98.5 99.0 99.5 100.0	32,50 23,30 19,55 18,50 17,97 17,60 17,30 17,06 16,80 16,80 17,06	18.63 18.31 17.99 17.67 17.53 17.51 17.78		N 36.20 36.20 28.02 2.48	$\frac{\lambda}{3.7}$	 74	t 60 25 25 20	20	
											·

Sulfuric acid (H_8SO_{+}) + Acetophenone (C_8H_8O)

Kendall and Carpenter, 1914

mo 1%	f.t.	mo 1%	f.t.
100	18.2	68.9	28.7
95.8 95.2	17.2 17.4	$\substack{68,6\\63.0}$	29.9 28.0
89.0 86.3	13.9 17.6	59.9 54.9	25.0 22.5
80.8	23.8	51.1	18.5
69.0	28.4	0.0	10.3
		(1+2)	

Sulfuric acid (H_2SO_{+}) + Benzophenone ($C_{12}H_{10}O$)

Kendall and Carpenter, 1914

100 47.8 46.2 96.4 46.4 42.6 92.9 44.5 38.8			mo1%
92.9 98.7 79.8 38.0 30.0 35.7 79.8 38.0 32.6 70.9 26.5 29.6 64.5 56,6 0.0	63.9 61.9 59.4 55.2 48.7 39.1	46.4 44.5 42.1 38.0 26.5	96.4 92.9 88.7 79.8 70.9

Sulfuric acid (H_2SO_4) + Coumarin ($C_9H_6O_2$)

Kendall and Carpenter, 1914

mo1%	f.t.	mo 1%	f.t.
100 89, 2 80, 7 73, 1 68, 3 63, 5 58, 4	68.4 62.3 53.4 51.8 46.5 40.4 30.8	54.2 50.5 46.2 42.6 38.4 35.2 0.0	32.7 35.5 34.5 32.3 24.0 14.0
30,4	90.6	0.0 (1+)	

Sulfuric acid (H_8SO_4) + Dimethylpyrone($C_6H_8O_2$)

Kendall and Carpenter, 1914

mo1%	î.t.	mo 1%	f.t.
100 85.4 76.1 71.5 66.9 63.5 61.1 57.3 55.3 51.3 50.6 47.1	132.0 124.0 115.0 109.0 103.6 101.8 100.2 90.4 84.2 88.1 93.4 96.0 93.4	46. 2 43. 3 41. 8 40. 5 40. 1 39. 5 38. 3 36. 1 34. 1 32. 2 30. 4 0	90.9 72.5 56.0 41.6 36.6 44.3 43.1 37.6 29.3 28.2 6.0 10.3
(1+2) (1+1)	(3+2)	

Sulfuric acid ($\rm H_2SO_4$) + Acetic anhydride ($\rm C_4H_6O_3$)

Atsuki and Ishii, 1931

%	đ	n(relative)	σ	н
100	1.075	0.0075	30.6	-
98.5	_	-	_	1.932
96.9	-	_	_	0.655
89.6	_	-	_	20.27
85.5	1,177	0.0217	29.5	18.70
74.5	_	-	-/	35.49
65.9	1.296	0.306	41.3	290.0
59.0		-		119.1
43.8	-	_	-	15.34
36.5	_	_	_	20.00
22.6	1,665	0.740	59.6	129.5
18.5	-	0.710	37.0	223.8
14.6	1.721	0.276	60, 25	423.8
10.4	1,,21	0,270	00.23	663.4
5.5	1.786	$0.\bar{1}19$	E0 E	
0.0	1.867		58.5	766.0
0.0	1.00/	0.126	55 .2	-

Sulfuric acid ($\rm H_2SO_4$) + Benzoic anhydride ($\rm C_{1\,^{13}H_{1\,0}O_3}$)

Kendall and Carpenter, 1914

mo1%	f.t.	tr	101%	f.t.	
100 94.8 90.2 85.7 81.0 77.2 73.5	39.5 38.9 42.3 45.3 49.2 50.0 51.0	4 3 3 3 2	9.7 3.7 7.8 7.4 6.1 4.5 6.5	70.2 67.6 59.1 58.3 58.7 58.7 55.4	
67.6 62.2 55.4 (1+2)	57.3 64.3 69.4		5.8 0.0 (2+1)	25.0 10.3	

											····
Sulfur	ic acid (H ₂ SO ₄) + N	Methvl su	lfate((CaHzOvS)	%		н			
	,			21466(2116040)		0°	10°	18°	30°	
Drucke	r and Kass	el. 1911				0.00	35.7	56.0	77,6	117.5	
%	d		 б	 d	η	0.35 16.79	40.5 61.8	62.5 86.9	$85.4 \\ 112.0$	128.8 149.7	
	76,5°			 0°		32.16 34.59	32.7	46.4	59.5 52.0	7Ĩ.7	
0.00	1.7791	5291	0.00 1.	8546 ·	48426	40.19 42.47 47.57	18.5 17.1 12.0	24.5	31.7	46.5 43.9	
24.98 50.15	.6146 .4882 .3593	2806 50). 15	5732	31 299 18 2 61	11 55.84	$\substack{12.0\\5.67}$	17.1 7.59	9.38	13.5	
75.02 100.00	.3593	1492 75 802 100	5.02 0.00	4483 3516	6999 2732	66.03 72.24 79.15	2.50 1.35 2.30	2.07	$\frac{8.00}{2.78}$	3.82	
						ll 81.40	2.78	3.5 7	$\frac{4.60}{4.10}$	5,65	
						91.19 94.06	2.77 1.12	3.48 2.62	$\frac{4.07}{3.01}$	5.97 3.64	
Sulvur	ic acid (H ₂ SO ₁₄) + N	Ni trobenza	ene (C	(HaNOa)				·		
		,4 , .	T C C C C C C C C C C C C C C C C C C C	one (c	611511027						
Masson	. 1931										
mo1%	f.t.	mo1%	f.1	 t.		Bailey,					
99.7	5,35	40	10.			mol%	σ	mo1% 17°		σ	
90 82	2.4 0.7	30 20	5,	. 1		0.0	50.33	60	4	6.08	
80 70	2.0 7.2 10.0	17 10	-5, -7,	. 3		$\begin{array}{c} 0.5 \\ 1.0 \end{array}$	50.05 49.83	80 90	4	4.80 3.98	
60 50	10.0 11.6	0.85	+2 10			1.5	49.83 49.66 49.54	93 95	4	3.64 3.10	
50		(1+1)				2.0 3.0 4.0	49.25 49.00	95 96 97	4	2.80 2.73	
						5.0 10	48.80 48.25	98 98.5	4	2.85 2.98	
						20 25	47.76 47.52	99 99.5	4	3.11 3.27	
Usanov	ich, Kozmi	na and Tart	takovskaya	a, 193	5	40	46.87	100	4	3.47	
mo1%	d	mo1%	d								
	at	room t.									
0.00 0.35	1.86 1.86	46.57 55.84	1.48 1.44	4		Sulfuri	c acid (H ₂ SO ₃ ,) +	p-Nitro	benzaldehy	de
6.06 16.79	1.76 1.66	72.24 81.40	1.36 1.31	; 1			,		(C ₇ H ₅ No		
32.16 40.19	1.56 1.51	91.19 94.01	1.22 1.25	7		NZ . 1 - 1 - 3	l and Co	30	.1.4		
12.17	1,49	,,,,,				 	and Carp	~		<i>C</i> .	
%		η				mol%	f.t.	mo l		ſ.t.	
	00	<u>10°</u>		30°		100 90.6	104.4 100.7 94.8	44. 43.	6 9	70.4 70.4	
$0.00 \\ 1.64$	64000 63040	40680	30000 20850	2001 1992		90.6 79.7 73.2 65.0	90.9	40.	1 2	67.1 66.7	
3.69 5.86	62400	39500	31090 28670	1968 1856	30	65.0 55.4	85.0 76.6	34. 33	5	54.0 56.5	
6.18	60420 59940	39480 38 7 00	28930 27000	1896	50	55.4 49.7 49.5	74.5 74.8	24. 0.	1	32.6 10.3	
9.86 15.08	58950	3 77 50 33150	24490	1831		47.3	73.0	٠.	-	_ / • •	
24.35 35.29 37.22	51600 43930 45730	27830 28150	24260 20400 20300	1617 135 <i>6</i>	50						
39,68	45730 39210	25290	18670 13870	1296 1228 938	30 20						
49,42 65.07	28610 17020	18710 10370 5690	8010	575	60						
79.07 100.00	772 0 3110	2450	4610 -	35 (1 7 (00						
						1					

Sulfuric acid ($ m H_2SO_4$) + MethyI malate l ($ m C_6H_{10}O_5$)	Sulfuric acid (${ m H_2SO_h}$) + o-Cresol (${ m C_7H_8O}$)
Grossmann and Landau, 1910	Kendall and Carpenter, 1914
c (α)	mol% f.t. mol% f.t.
red yellow green pale dark viol. blue blue 20°	100 30.4 66.2 6.2 89.1 26.2 61.9 1.0 76.8 18.8 0.0 10.3 68.7 9.6
50,089	
	Sulfuric acid (H_2SO_4) + p-Cresol (C_7H_8O) Kendall and Carpenter, 1914
Sulfuric acid ($\rm H_2SO_4$) + Ethyl tartrate($\rm C_8H_{1 + O_6}$)	mo1% f.t. mo1% f.t.
Grossmann and Landau, 1910	100 34.6 56.0 24.0
c (a)	90.4 29.4 48.7 57.3 82.2 22.1 39.5 84.1
red yellow green pale dark viol.	75.4 11.6 34.7 91.9 68.0 11.0 33.8 93.4
blue blue	62.6 11.0 28.6 90.9
20°	54.1 7.5 16.2 57.8
= -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
49,928 +22,33 +28,04 +32,15 +37,55 +40,46 +44,06 24,964 32,05 37,05 43,66 54,08 61,49 12,482 33,17 39,10 47,99 57,36 63,69	
5.038 47.84 60.74 72.85 86.94 96.67 +108.57	(1+2) (2+1)
2.519 +49.62 +62.33 +75.03 +89.32 +98.85	
Sulluric acid ($\rm H_2SO_4$) + Phenol ($\rm C_6H_6O$)	Sulfuric acid (${\rm H_2SO_4}$) + o-Xylenol (${\rm C_8H_{10}O}$)
Kendall and Carpenter, 1914	Kendall and Carpenter, 1914
mol% f.t. mol% f.t.	mol% î.t. mol% î.t.
100	100 63.7 50.7 53.8 37.5 57.6 47.8 60.8 30.2 50.3 44.6 71.5 75.8 47.0 41.5 80.7 72.1 42.4 34.0 90.0 63.7 31.6 30.4 89.4 70.9 68.0 25.3 84.8 66.9 70.0 20.3 72.8
55.4 12.2 0.0 +10.0 (1+2)	60.2 68.9 16.1 58.3 54.4 63.4 0.0 10.3
	(1+2) (2+1)

Sulfuric :	acid (H ₂ S	0_{1}) + p - Xy	enol ($C_8H_{10}0$)	Sulfuric acid (H_8SO_4) + p-Nitrophenol($C_6H_5NO_3$)
Kendall a	nd Carnent	or 1914		Kendall and Carpenter, 1914
mo1%	r.t.	mo1%	f.t.	mol% f.t. mol% f.t.
100 91.1 81.1 71.7 67.0 61.7	74.0 71.0 67.9 80.6 84.2 87.2	54.0 46.4 40.1 32.8 24.7 0.0	90.4 92.4 101.0 104.0 91.9 10.3	100 113.8 58.4 80.7 92.7 109.4 53.0 73.5 83.9 102.7 50.6 70.4 76.9 97.0 44.7 60.3 68.1 89.9 35.6 35.1 64.1 88.3 0.0 10.3 (1+2)
(171)	,	(2+1)		
Sulfuric	acid (H ₂	ՏՕդ) + Thyr	mol (C ₁₀ H ₁₄ O)	Sulfuric acid (H_8SO_4) + Acetic acid ($C_8H_4O_2$)
Vandall a	nd Carpent	or 1914		Pickering, 1893
mo1%	f.t.	mo1%	f.t.	% Df.t. % Df.t.
100 92.4 83.3	49.6 47.1 43.0	72.2 64.7 0.0	42 L ₁ +L ₂ 42 L ₁ +L ₂ 10.3	0.921 -1.87 4.705 -11.27 1.769 3.80 6.516 16.18 2.769 6.27 8.986 -25.44 3.638 -8.16
				% f.t. % f.t.
Kendall a	and Carpen	ter, 1914	trophenol (C ₆ H ₅ NO ₃)	97.319 +15.74 77.358 +7.59 94.933 15.10 72.077 +2.13 92.220 14.37 67.394 -4.77 89.935 13.88 63.077 -17.97 87.233 13.10 59.216 -28 82.876 +11.09
mo1%	2.t.	mo 1%	f.t.	
100 93.6 88.0 82.3 75.7 74.4 68.9 67.9 66.5	45.0 43.9 42.4 41.5 40.7 41.4 39.5 40.6 39.1	63.8 59.3 52.6 45.6 40.7 32.0 25.8 0.0	38.7 39.3 37.0 33.5 30.0 21.0 11.0	Jones, 1894
Sulfuric	acid (H ₂	SO ₁ ,) + m_N	itrophenol ($C_6 H_5 NO_3$)	Drucker and Kassel, 1911
Kendall	and Carpen	ter, 1914		% d % d
mo1%	f.t.	mo1%	f.t.	76.5° 15° 76.5° 15°
100 93.3 87.7 82.0 73.5 68.5 60.5	95.4 92.5 89.4 84.7 81.7 82.7 78.6	55.2 51.4 45.9 37.7 31.7 24.7 0.0	73.5 69.4 62.3 52.2 39.4 18.0	0.00 1.7791 1.8405 70.07 1.2025 1.2708 9.93 .6986 .7582 90.01 1.0547 1.1243 29.83 .5690 .5920 100.00 0.9853 1.0550 50.18 .3565 .4222
(1+	2)			

Usanovich and Naumova, 1935	
mol% d	Usanovich and Naumova, 1935
<u>0</u> ° 10° 20° 30°	mo1% η mo1% η
0.00 1.8513 1.8409 1.8305 1.8205 24.01 .7340 .7240 .7170 .7070 30.03 .6985 .6886 .6800 .6720 50.06 .5555 .5450 .5367 .5275 66.57 .4090 .3980 .3880 .3770 74.96 .3370 .3250 .3104 .3056 100.00 .0697 .0593 .0491 .0392	15° 71.22 40000 44.59 139000 73.21 54000 32.15 97000 67.72 78000 30.06 83000 65.97 89000 18.03 45500 62.31 119000 9.60 35500 58.44 132000 5.84 32000
Briner, Hoekstra and Susz, 1935	
mol% d mol% d	Briner, Hoekstra and Susz, 1935
25°	mol% n mol% n
100,00 1.045 45.3 1.560 82.2 .239 36.8 .618 71.4 .343 29.7 .666 63.2 .415 15.3 .754 51.2 .512 0.0 .840	25° 100.00 1200 45.3 560000 82.2 60700 36.8 448000 71.4 187400 29.7 310200 63.2 364000 15.3 154000 51.2 543500 0.0 106000 49.4 557500
Briner, Hoekstra and Susz, 1935	Hall and Voge, 1933
25°	mol% и mol% и
100.00 0.00 45.3 7.0 82.2 4.70 41.9 6.9 71.4 6.52 36.8 6.6 63.2 6.93 29.7 5.5 59.8 7.00 15.3 3.84 51.2 7.05 0.0 0.0 49.4 7.06	25° 100 0.265 62.8 111.3 98.768 0.265 59.6 113.9 95.845 8.561 47.7 154.0 94.800 15.31 36.1 294.5 88.67 66.58 26.3 539.4 82.5 100.9 16.5 745.0 74.2 112.8 7.1 711.6 72.3 112.6 4.0 545.2 69.3 111.6 1.0 257.3 67.5 111.1 0.0 100.0
Drucker and Kassel, 1911	
76.5° 15°	Briner, Hoekstra and Susz, 1935
0.00 5033 26939 9.93 7174 41947 29.88 10718 137174 50.18 9434 114679 70.07 3891 31348 90.01 1256 3817 100.00 564 1333	mo1% x mo1% x 25°

Usanovich and Naumova, 1935 mo1%	Sulfuric acid (H_2SO_4) + Glutaric acid ($C_5H_8O_4$)
0° 10° 20° 30°	
76,22 46,1 67,9 107,6 156,7 73,21 37,1 68,2 106,1 160,8	Kendall and Carpenter, 1914
67,72 35,1 63,5 106,0 161,5 65,97 34,2 63,4 105,7 164,4	mol% f.t. mol% f.t.
67.72 35.1 63.5 106.0 161.5 65.97 34.2 63.4 105.7 164.4 62.31 32.7 60.4 101.4 156.5 58.44 33.7 62.2 104.8 162.4 48.33 47.2 84.0 136.8 205.7 44.59 65.2 111.4 176.5 254.2 32.15 185.1 259.0 365.6 511.5 30.06 207.1 301.4 420.8 562.8 26.52 280.7	100 93.5 49.0 37.1 87.4 92.9 47.8 35.0 78.8 88.6 45.5 49.7 (1+1) 70.9 82.5 41.6 47.7 65.2 75.7 39.0 46.0 59.6 63.9 33.5 40.1 54.1 51.7 0.0 10.3
mo1% и mo1% и	Sulfuric acid (H_2SO_4) + Crotonic acid ($C_4H_6O_2$)
71.22 87.76 44.59 143.95 73.21 87.19 32.15 312.32 67.72 84.77 30.06 364.1	Kendall and Carpenter, 1914
65 97 84 53 18.03 643.3	mol% f.t. mol% f.t.
62.31 80.92 9.60 769.6 58.44 83.505 5.84 682.1 48.33 110.01	100 71.0 59.3 22.3 93.8 67.5 54.9 21.3 83.5 61.9 49.7 24.3 74.6 54.7 43.5 23.3 69.1 47.0 38.1 15.8 65.9 40.4 33.7 1.5
M(SO ₄ H ₂) λ	
0° 0.000005 0.12 0.049 0.37 0.232 0.89 0.780 1.67 1.253	Sulfuric acid ($ m H_2SO_4$) + Benzoic acid ($ m C_7H_6O_2$)
2.70 1.157 3.70 0.995	Kendall and Carpenter, 1914
4.35 0.986	mol% f.t. mol% f.t.
	100 121.8 34.2 77.2 98.0 120.6 30.8 72.3 92.1 115.8 26.2 61.4 83.9 109.6 24.2 53.2 69.1 92.5 22.6 44.6 67.4 90.0 18.6 25.8 60.2 82.3 9.9 -6.2 56.9 84.2 8.0 -1.2 51.8 86.2 5.7 +3.2 49.5 87.3 3.2 +7.0 44.3 86.3 0.0 +10.3 39.2 83.2 (1+1)

Sulfuric acid (H_2SO_4) + α -Toluic acid ($C_8H_8O_2$)

Kendall and Carpenter, 1914

mol%	f.t.	mo 1%	f.t.	
100 91.1 83.8 71.6 69.9 68.7 67.1 65.3 61.6 56.3 749.8	76.8 71.1 67.7 59.4 56.8 55.0 53.2 50.1 40.6 61.7	45.1 42.6 39.5 37.9 36.2 28.7 16.3 6.8 5.1 2.5	61. 2 60. 7 60. 0 58. 7 55. 0 47. 7 15. 8 -9. 0 -3. 0 5. 6 10. 3	

Sulfuric acid (H_2SO_4) + o-Toluic acid ($C_8H_8O_2$)

Kendall and Carpenter, 1914

mo1%	f,t.	mo 1%	f.t.	
100 88.7 78.0 68.1 66.7 61.1 58.1 51.9 51.6 47.4	102.9 97.8 92.0 83.6 82.2 74.2 67.0 58.7 58.7 58.2	44.3 39.5 37.0 33.6 30.7 25.6 20.1 4.6 2.4 0.0	57.6 56.3 54.6 49.1 45.6 33.5 12.0 3.0 7.2	

Sulfuric acid (H₂SO₄) + m-Toluic acid (C₈H₈O₂)

Kendall and Carnenter 1914

mo 1%	f.t.	mo 1%	f.t.
100.0	110.0	47.1	68.8
84.5	100.5	45.0	62.3
74. 3	92.0	36.3	5 6.2
67.7	83.6	42.5	61.8 (1+1)
64.1	78.7	39.7	58.4
61.8	74.9	36.4	55.6
64.7	79.3 (1+2)	34.8	54.0
61.8	78.9	34.0	52.7
60.2	78.3	30.8	46.5
59.5	78.3	27.1	37.5
58.7	78.0	22.4	20.8
55.6	76.2	7.7	-1.8
54.1	75.9	2,4	+7.3
50.9	72.2	$\bar{0}, \dot{0}$	+10.3
49.9	71.6	- • •	

Sulfuric acid (H_2SO_4) + p-Toluic acid ($C_8H_8O_2$)

Kendall and Carpenter, 1914

mo1%	f.t.	mo 1%	f.t.	
100 84.2 71.0 62.9 55.2 51.3 49.6 46.8 45.5 42.2	180.2 167.5 154.7 143.7 127.0 116.0 111.2 100.2 99.5 98.9	37.1 32.8 28.1 23.0 21.0 16.8 14.7 6.2 3.2 1.7 0.0	94.9 88.5 77.5 58.7 53.0 18.0 7.5 -2.2 +3.0 +5.8 +10.3	

Sulfuric acid (H_2SO_4) + Monochloracetic acid ($C_2H_3O_8C1$)

Kendall and Carpenter, 1914

	-			
mol%	f.t.	mo1%	f.t.	
100 94.4 88.1 78.9 65.1	61.7 60.5 57.8 52.7 41.1	62.3 59.7 53.7 46.0	38.1 34.5 25.2 9.2	

Pushin and Stanojevic, 1940-46

		•			
mol %		f.t.		·E	
0 5 10		+10.4		-	
5		+ 4		-	
10		- 3		-3	
20		-18		-3	16
40		- 3		-	
50		+19		-3	
60		+36		-3	
70		+46		-3	
80		+53		-	
$\begin{smallmatrix} 90\\100\end{smallmatrix}$		+59.5 +62.6		-	
100		+02.0			
mol % d	η	t	101 %	d	Τ)
		50°			
0 1.8039	9220	00	50	1,6091	9870
10 .7796	9370		60	.5633	9420
20 .7374	9630		66.6	.5330	8760
.6956	9990		70	.5167	8070
33.3 .6815	10020		80	.4752	6050
37 .6659	10080		90	.4215	4170
40 .6536	10100	1	.00	3800	2150
43 .6393	10050				

Sulfuric acid (H ₂ SO ₄) + Dichloracetic acid	mol% d η mol% d η 50°
(C ₂ H ₂ O ₂ Cl ₂) Pushin and Stanojevic, 1940 - 1946	0 1.8039 9220 50 1.6799 12370 10 .7766 10840 60 .6524 11230 20 .7517 12230 70 .6304 9500
mol % f.t. E mol % f.t. E	25 .7409 12660 80 .6058 7220 30 .7261 13060 90 .5810 5180
0 +10.4 - 65 -10 -26 12 + 2 -26 75 -3 -25 25 - 8 -25.5 85 +3 - 45 -25 -25 100 +12 - 63 -12 -25	32.9 .7189 13040 100 .5550 3200 40 .7005 13020
mol % d n mol % d n	Usanovich and Tartakoskaya, 1946
25° 0 1.8277 22790 39.5 1.7152 24210	mol% п mol% п
0 1.8277 22790 39.5 1.7152 24210 18.5 .7649 24380 51.2 .6864 22860 25 .7540 24910 78.8 .6065 13360 28.5 .7450 25150 100 .5508 5890 33.1 .7311 24880	0.00 10500 54.58 5400 1.52 10100 70.56 4700 14.54 8600 79.66 4200 23.85 6500 97.41 4100 47.50 5700 100.00 3800
Sulfuric acid ($\rm H_2SO_4$) + Trichloracetic acid ($\rm C_2H_3O_2Cl_3$)	mo1%
Kendall and Carpenter, 1914	0.00 90 200 330
mol% f.t. I mol% f.t. II	0.61 76 147 248
100.0 57.3 43.9 38.4 89.3 56.1 32.9 33.8 78.1 53.4 21.9 24.0 68.2 51.2 17.8 20.2 58.3 49.2 13.4 13.4 54.0 47.9 7.8 1.0 49.5 47.0 2.9 7.5 41.7 44.8 0.0 10.3 37.7 42.6 33.2 41.9 30.8 39.2 26.1 36.5	4.25
26.1 36.5 24.9 35.3 21.0 31.7 17.9 29.0 14.1 21.6 11.3 15.5	Sulfuric acid ($\rm H_2SO_4$) + Chlorocrotonic acid ($\rm C_4H_5O_2C1$)
	Kendall and Carpenter, 1914
Pushin and Stanojevic , 1940-46	mol% f.t. mol% f.t.
mol% f.t. E I II	100 99.0 52.8 58.5 90.4 93.5 48.1 49.5 80.2 86.5 43.9 41.0 69.4 79.5 39.0 30.0 63.5 73.2 31.0 2.0
0 10.4	63.5 73.2 31.0 2.0

Mezhenn	ii,1956					Ammonium	bromide	(NH ₁ Br) + Dime (C ₃ H		namide
mo 1%	t		н			Dawson, L	eader a	nd Zimmen	man, 195	l (fig.))
32.15 50.03 67.50	70 70 77 85		133.5 65.6 9.94 2.29			m (NH ₁ Br)	20°	0°	н -20°	-40°	_50°
72.99 76.42 89.6 89.6 89.6 89.6 89.8 91.8 95.01	74 70 34 30.1 28 26 43 20.3 20.3 20.3	3 3 3 3	1.68 1.54 0.294 .320 .328 .337 .3461 .4423 .0129 .0050			0. 22 .50 .65 .75 .90 1. 10 1. 33 1. 65	43.0 65.9 71.5 79.8 86.8 92.5 96.8	34,0 50.7 55.2 59,9 64.5 68.6 71,4 74.7	24.4 36.3 41.2 42.5 43.5 44.3 45.3 44.8	16.7 21.5 23.4 24.7 24.7 23.2 22.8 21.7	12. 1 16. 9 18. 2 18. 3 17. 7 15. 8 15. 4 12. 7
96.6 mo1%	20.8 40°	44°	.00065 * 50°	52°	65°	Ammonium	bromide	(NH ₄ Br) + Meth	-	ol.
0 5.18 25.11 55.01	84.0 99.0 83.4	<u> </u>	112.5 200.1 143.5	- - -	-	Bedwell,	1943 f.t.	K	f.t.		
69.49 73.99 79.51 85.02 91.90	0.68 0.51 0.167	0,282	1.07 0.68 5.95 5.45	0.84	10.99	90.39 89.65 89.02 88.43	0 10 20 30	87.67 87.05 86.49	40 50 60		
						Ammonium	iodide	(NH ₁ I)	+ Ethyl a	alcohol (С2Н60)
						Perkin, 1	889				
						%		d			
						100 78.90	15° 0.794 0.94		10° 0.9		
						%	t		(a)maş	gn.	
					4.	100 78.90	16, 15,	. 8	0.863 1.283		
					:	Gladstor	ne and H	ibbert,	1897		
						%	molar	refracti	on		

	nium iod	lide (NH	ι ₊ Ι) + G	lycerol	(CaHac)3)	Amtao	nium nitra	te (H ₄ N,		Phenylene	ediamine
Davi	s and Jo	ones, 191	2 _ 13				K ha i	shbashev,	1945			
M (NH ₁	[)	molar	conducti	vi ty			%	f.t.	Е	т	tr.t.	III
	25°	35°	45°	55°	65°	75°				I	84.0	32.0
1.0 0.77 0.50 0.25 0.10 0.02 0.01 0.005 0.0025 0.0012 0.0006	.404	0.770 .746 .717 .665 .700 .740 .764 .760 .753 .777 .811	1. 385 . 361 . 312 . 224 . 321 . 373 . 414 . 396 . 401 . 441 . 457	2.304 .268 .140 .069 .210 .331 .424 .386 .410 .485 .528	3.602 .540 .404 .266 .506 .707 .843 .805 .819 4.010 4.130	5.260 .189 .272 4.858 5.278 .534 .772 .606 7.950 8.110	0 5 10 15 20 25 30 35 40 45 55 60	165.5 155.0 149.0 141.5 134.5 140.0 141.5 142.0 141.0 137.0 132.0 121.0	133,0 134,0 134,0 134,0 78,0 80,0 83,5 82,5	125.0 123.0 120.0 118.0 117.0 118.0 117.5	79.0 47.0 47.0 46.5 47.0 46.0 - - -	31.0 26.0 29.0 27.5 25.5 29.0
M (NH ₄ I			water ^t =				65 70	100.5 89.5 99.5	87.5 88.5	-	-	-
	25°	35°	45°	55°	65°	7 5°	75 80 85	106.0 120.0	89.0 89.0	-	-	-
1.00 0.75 0.50 0.25 0.10 0.00	4.399 4.769 5.119 5.418 5.766 5.826	2.063 .219 .355 .511 .623 .648	1.071 .139 .205 .255 .325 .332	0.5927 .6215 .6540 .6807 .7060	.3850 .3963 .40 2 8	0.2264 .2344 .2424 .2516 .2579 .2558	90 95 100	129.5 138.5 146.8	85.0	- -	-	- -
	onium ni shbashe	trate (H	I ₄ N ₂ O ₃)	+ m_Phe		iamine		onium nitra .shbashev,	·	31.2 / . 1	e e cum e c	(02115 0117
%		v, 1945					%	f.t.	E	I	tr.t.	III
	f.t.	v, 1945 E			.t.	III	0 5 10			1 125 121.5 120.0		32.0 30.0 29.0

Ammonium nitrate ($H_{14} O_3 \, N_{\odot}$) + Urea ($C H_{14} O N_{\odot}$)

Khaishbashev, 1945

%	f.t.	E		tr.t.	
			I	11	III
0	165.5	_	125	84	32
0 5	144.8	_	120	53.8	30.5
10	124.0	_	120	53.8	31.0
ĨŠ	119.0	_		54.0	29.0
20	114.0	_		54 .0	29.0
25	105.0	_	-	54.0	29.0
30	84.4	44.5	-	-	30.0
35	73.5	45.5	-	55.2	29.5
40	64.0	48.0	-		30.0
45	53.0	49.0	_	-	29.3
50	54.2	49.0	-	_	29.0
55	62.5	49.0	_	_	27.0
60	69.5	49.0	_	-	25.0
70	84.4	48.0		_	25.0
80	100.5	49.0		_	20.0
90	115.5	47.2	-	_	_
95	124.0	41.0	_	_	_
100	133.2	-	_	_	_
	-				

A.N. Campbell and A.J.R. Campbell, 1947

E: 48.27 mo1% 46.9°

Ammonium nitrate ($H_uO_3\,N_2$) + Ethylene diamine dinitrate ($C_2\,H_{1\,0}O_6\,N_2$)

A.N. Campbell and A.J.R. Campbell, 1947

%	f.t.	Е	%	f.t.	E
10 20 30 40 50	151 137 122 110 98,2	132 124tr.t 97.3 97.3 96.8	. 50 60 80 90	100.2 101.75 102.5 135.5 148	103 104 102.1 124.5
50%	G100 =	1.633			

Ammonium nitrate ($H_4N_2\theta_3$) + $+ \mbox{ Octadecylamine nitrate ($C_{1.8}H_{3.8}\theta_3N_2$)}$

Campbell, A.N. and A.J.R., 1947

%	f.t.	%	f.t.	_
100	76.1	80	73.0	
90	74.0	60	72.3	

Ammonium nitrate ($H_4N_2O_3$)

+ Aniline hydrochloride (C6H8NC1)

Klug and Pardee, 1945

mol %	f.t.	mol %	f.t.
2.75 2.95 4.51 5.58 6.39 6.42 7.72 8.45 9.84 10.10 10.83 11.42 13.38 17.20.94 24.97 28.71 29.18 30.65 33.59	160.50 159.90 153.10 150.50 151.18 150.50 149.30 149.08 146.89 146.89 146.89 146.80 147.80 147.80 149.65 152.70 154.64 155.30 151.87 150.90 150.17	36.29 38.20 38.80 40.36 43.00 48.12 53.49 59.05 65.10 71.23 75.00 77.81 80.13 84.15 84.80 89.20 92.14 93.30 95.24	155.00 155.50 155.58 158.28 160.41 165.00 174.00 178.20 182.18 182.25 183.51 183.60 183.19 184.88 183.52 184.32 184.32
00,09		+1)	

Ammonium nitrate ($H_4N_20_5$) + Aniline nitrate ($C_6H_7N_20_5$)

Klug and Pardee, 1945

mo1%	f.t.	mo 1%	f.t.	
2.62 2.65 5.39 8.38 9.56 10.49 11.18 12.79 15.05 16.74	129.97 164.89 161.50 156.40 154.04 154.14 156.02 157.25 157.52 157.52	31.92 35.45 38.49 43.27 46.93 48.46 51.72 55.55 60.75 67.30 73.98	157. 18 158. 15 157. 93 159. 05 160. 18 160. 32 161. 21 162. 57 164. 69 164. 95 167. 62	
21.77 23.84 25.08 27.48 29.64	157.94 157.17 156.74 157.70 157.63	80,25 90.02 100.00	173.28 181.70 187.80	

Urbans	ski and Ski	rzynecki,	1936		
%	f.t.	E	%	f.t.	E
				157 1	127 2
$_{10}^{0}$	169.4 152.5	127.5	50 60	157.1 169.1	127.2 127.2 126.5
20	137.2	127.7	70	179.4	126.5
25		127.7	80 90	190.5	126.4 122.0
30 40	131.1 145.1	127.7 127.7 127.2	100	202.0 216.6	122.0
					
Ammon	ium nitrate	e (H ₁₄ N ₂ O ₃	,) + N	i troguanid	ine
				(Сн	40 ₂ N ₄)
Urban	ski and Sk	rzynecki,	1936		
%	f.t.	E	%	f.t.	E
		-, 		1/2 5	101.5
0	169.4	129.7	40 50	162.5	131.5
10 15	$148.8 \\ 142.0$	131.5	60	175.6 182.9 135.0	-
20	131.5	131.5 131.5 131.6	70	135.0	-
25	$131.5 \\ 133.8$	131.6	80	155.0	-
30	146.1 157.8	101.5	90	134.0	-
35	157.8	131.5	100	232.0	-
	um nitrate	(H ₁₊ N ₂ O ₃		trocellul C ₁₂ H ₁₄ O ₂₂ N	
	i, 1938	($H_{11}N_{2}O_{3}$		C ₁₂ H ₁₄ O ₂₂ N	
Urbansk % 20	i, 1938			C ₁₂ H ₁₄ O ₂₂ N	
Urbansk % 20 30	i, 1938	3160 3320		C ₁₂ H ₁₄ O ₂₂ N	
Urbansk 20 30 40	i, 1938	3160 3320 3600		C ₁₂ H ₁₄ O ₂₂ N	
20 30 40 50	i, 1938	3160 3320 3600 4060		C ₁₂ H ₁₄ O ₂₂ N	
Urbansk % 20 30 40	i, 1938	3160 3320 3600		C ₁₂ H ₁₄ O ₂₂ N	
Urbansk	i, 1938	3160 3320 3600 4060		C ₁₂ H ₁₄ O ₂₂ N	
Urbansk 20 30 40 50 100	i, 1938	3160 3320 3600 4060 5400	((city (m/sec.)	6)
20 30 40 50 100	explo	3160 3320 3600 4060 5400	((city (m/sec.)	6)
Urbansk 20 30 40 50 100	explo	3160 3320 3600 4060 5400	(((city ()) + Me	m/sec.)	6)
# 20 30 40 50 100 Ammoni	explo	3160 3320 3600 4060 5400	(((city ()) + Me	m/sec.)	6)
# 20 30 40 50 LOO Ammoni	explo explo um nitrate	3160 3320 3600 4060 5400 e (H _h N ₂ O ₃	(((city ()) + Me ((()))) (())	m/sec.)	6)
# 20 30 40 50 100 Ammoni	um nitrate	3160 3320 3600 4060 5400 • (H ₄ N ₂ O ₃) + Me (()	m/sec.)	6)
### ##################################	um nitrate g, 1893 d 16° 2 0.8297	3160 3320 3600 4060 5400) + Me (()	m/sec.)	6)

	η(rela-	tive)
	83.6%	78.6%
35	1.830	-
10 15	.862	2.315
50	. 852 . 856	.102 .101
J	. 856	.101

Ammonium nitrate ($\rm H_4N_2O_3$) + Mannito1 ($\rm C_6H_{1\,\mu}O_6)$

Khaishbashev,	1945
---------------	------

%	f.t.	Е	tr.t.
0	165.5	_	125.84
10	151.0	87.7	123.81
20	132.0	89.0	123.5: 82°
2 5	123.5	88.5	77.5
30	117.2	8 7. 3	30.5
35	112.8	90.5	77.3
40	106.5	92.2	78.0
45	102.0	94.2	80.0
50	97.0	95.0	79.0
52	95.0		80.0
55	100.2	94.0	80.0
60	105.0	94.5	74.0
65	112.9	94.6	78.0
70	119.0	94.5	79.0
7 5	125.3	94.0	75.0
80	134.0	92.5	_
90	150.0	87.0	_
100	166.0	_	_

Anmonium nitrate ($H_4N_20_3$) + Cholesterol ($C_{2\,2}H_{4\,6}0$)

Khaishbashev, 1845

%	f.t.	E	tr.t.	
0	165.5	_	125,0	
10	164.0	139.0	122.5	
20	164.4	$\bar{1}40.0$	121.5	
30	163.5	141.5	120.0	
40	163.0	142.3	120.0	
50	162.0	141.5	120.0	
60	163.0	141.0	120.0	
70	161.5	141.8	120.0	
80	160.5	143.0	120.0	
90	159.0	144.0		
95	155.5	144.0	_	
97	144.0	_	-	
100	148.0	_	_	

Ammonium	nitrate (H	. N ₀ O ₂)	+ Resorcia	nol (C ₆ H ₆ O ₂)
	shev, 1945	μ.ν.χο ₃ ,	Resoluti	101 (C ₆ 11 ₆ U ₂)
K	f.t.	Е	tr.t	
0 10 20 30 40 45 50 60 70 80 90	165.5 152.5 145.0 136.5 130.0 125.0 123.0 115.0 104.5 94.0 101.0	77.0 91.5 91.5 92.5 93.0 92.5 93.5 93.5 94.0	123.0;5 120.0;5 118.0;5 120.0;5 - 5. 119.5;5	4.0; 32.0 3.5; 30.2 2.5; 29.0 5.5; 29.5 3.5; 23.0 5.5; 26.0 3.5; 27.5 0.5; 29.3 9.0; 29.5 9.0; 28.0
	um nitrate ((
%	f.t.		%	f.t.
10	159.5		55	115.0
Urbansk %	i, 1938 P Kg		%	P Kg
	r 10 % of pro	babilit	 	
100 90 80 70 60 For	1.3 0.9 0.8 0.7 0.6		50 40 30 20 10	0.5 0.45 0.5 0.85 0.3
100 80 60	3.9 3.0 3.2		50 40	3.6 5.0
Khai shl	bashev, 1945			
%	f,t.	Е	tr.t.	
0 5 10 20 30 40 50 60 70	165.5 165.0 165.0 165.0 165.0 165.0 165.3 165.0 165.0	78.3 77.0 79.9 78.9 78.6 79.5 78.4 78.2 79.3	125.0 123.4 124.4 123.0 123.8 122.8 118.4 121.4 120.0 120.4	

Ammonium nitrate ($H_u N_2 \theta_3$) + Picric acid ($C_6 H_3 \theta_7 N_3$)

Khai	sbashev, 1	945			
%	f.t.	Е	tr.	t.	
			I	II	
0 5 10 15 20 25 30 35 40 45 55 60 65 70 75 80	165.5 156.3 152.0 151.8 150.0 148.3 149.0 149.0 147.5 149.0 150.2 149.5 148.0 148.2		125 118 119,5 120,0 120,0 120,0 115,2 120,0 120,0 120,0 116,0 114,4 116,0 114,4	84.0 61.0 72.0 61.3 80.0 79.3 70.5 79.2 65.8 68.5 69.0	
85	140.0 126.0	116.0 116.0	=	-	
90 95	120.0	116.0	-	-	
97 100	120.0	116.0	-	-	

Ammonium nitrate ($H_{\rm u}N_{\rm R}0_{\rm 3}$) + Acetic acid ($C_{\rm Z}H_{\rm u}0_{\rm R})$

mo1%	f.t.	mo1%	f.t.	
100,0000	16,60	80.64	102,6	
99.9259	16.57	76.70	106.3	
99,3713	16.47	72. 36	108.9	
99.71 68	17.7	68 .7 5	110.6	
99.6751	21.4	62.02	113.1	
99.6084	27.0	56.69	115.8	
99,4857	33.6	52.44	117.0	
99.1255	45.8	48.33	118.3	
93.366	61.2	44,50	120.0	
98.113	63.5	39.90	121.4	
97.532	6 7. 6	36.90	122.9	
97.364	69.0	33 , 20	124.8	
96 .7 61	71.4	23.40	128.9	
96.553	72.8	25.00	131.4	
95.290	7 8.3	21.40	136.9	
94.492	80.9	17.70	143.1	
92.745	85 .7	13.70	149 .7	
91.380	39.0	10.40	15 7. 8	
36.320	97.1	0.00	167.5	
82.850	101.0			

HYDROGEN + p-HYDROGEN

	P ₂ η P ₂ η					
W. TWO INORGANIC NON METALLIC SUBSTANCES .	220					
LXXII. ELEMENTS + INORGANIC SUBSTANCES .	1.0000 12.425 0.7829 11.850 0.9900 12.388 .7634 11.743 .9608 12.310 .6513 11.382 .9572 12.309 .4998 10.882 .9111 12.170 .2591 9.330 .9003 12.133 .2564 9.913 .3677 12.050 .0000 8.788					
Hydrogen ($ m H_2$) + p-Hydrogen ($ m H_2$)						
Urey and Teal, 1935	De Troyer, van Itterbeek and Rietveld, 1951					
% t equil. % t equil.	8 n % n					
100.00 -273 25.96 -73 99.82 -253 25.24 -23 76.89 -223 25.13 0 38.51 -173 25.07 +27 28.54 -123	at room t. 0					
Hy $ ext{d}$ rogen ($ ext{H}_2$) + Deuterohy $ ext{d}$ rogen (HD)	Archer, 1938					
Newman, 1955	% heat conductivity coefficient , 10^6					
Dew point pressures are 1.5% greater than predicted by Raoult's Law.	0° 413.2 19.8 382.4 34.5 364.7 50.4 350.4 60.5 341.1					
Hydrogen ($ m H_2$) + Deuterium ($ m D_2$)	81.3 99.95 308.0					
Newman, 1955						
Dew point pressures are 3% greater than	Hydrogen ($ m H_2$) + Helium ($ m He$)					
predicted by Raoult's Law.	van Itterbeek, Nihoul and al., 1956 (fig.)					
Van Cleave and Maass, 1935	Constants of state, by an indirect acoustical method.					
mol% η (vapour)						
+22° -78.5° -183.4°						
99.00 12.336						

Gibby,	Tanner a	nd Massor	1, 1929			Trautz and Kipphan, 1929
%	a	b. 10 ⁴	 %	<u>a</u>	b. 10 ⁴	t n t n t n
100.00 33.49 73.99 66.64 57.54 50.11 50.06 42.42	25° 1.09035 .0912 .0909 .0904 .0911 .0916 .0915	5.10 5.67 5.92 5.97 6.36 6.38 6.41 6.56	100.00 50.11 0.00	50.0° 1.1827 .1836 .1832	5.07 6.44 6.71	78.37% 48.70% 19.60% 22.8 17.05 23.2 13.61 21.5 10.65 100.3 19.99 100.0 15.93 100.0 12.51 200.4 23.41 200.4 18.67 200.0 14.68
33.00 26.40 16.26	.0901 .0904 .0905	6.62 6.61 6.56				Trautz and Binkele, 1930
100.00 50,11	75.0° 1.2748	5.02 6.37	100.00 50.11	100.38° 1.3669 .3696	4.86	0% 30.82% 39.31% 44.80% 100%
100.00	.2751 .2748 125.2° 1,4605	6.86	100.00	.3669 150.1° 1.5486	6.43 6.93 4.62	20 8.75 11.66 12.52 13.17 19.74 100 10.29 13.83 14.78 15.51 23.20 200 12.11 16.19 17.28 18.17 27.15 250 12.96 17.32 18.52 19.39 29.03
50.11	.4592 .4582 175.0°	6.20 7,02	50.11	.5494 .5516	4.41 4.93	
100.00 50.11 0.00	1.6337 .6455 .6420	4.87 6.20 6.87	pv = a	+ bp		Trautz and Zimmermann, 1935
Gille,	1915	η				-183,2° 0.00 3,706 68,52 6,997 25.05 4.811 76,62 7.450 42,71 5.659 100.00 8.841
100 97.98 94.44 92.63 85.65 72.36 56.74 31.44 0.00	18,925 18,500 17,596 17,327 16,032 14,306 12,267 10,165 8,410	15° 19.611 19.133 18.319 17.846 16.528 14.769 12.652 10.548 8.776	23.4 22.3 22.0 21.5 19.8 17.8 15.1 12.6	08 07 32 55 60 47 74		Van Itterbeek, Van Paemel and Van Lierde, 1947
Trautz	and Nara	th, 1926				-
- %	n .	- %	ŋ			van Itterbeek and Van Doninck, 1946
0.0 25.0 33.3 50.0	8.77 12.24 14.34 16.91	15° 66.7 75.0 100.0	18. 19. 19.	42 20 60		** velocity of sound (m/sec.) -252.9° 100
						For the velocity of sound as a function of pressure, see authors .

	% a b.10 ¹⁴ c.10 ⁶
Hydrogen (H ₂) + Neon (Ne) Trautz and Binkele, 1930 t	25° 16.44 1.09113 5.53 0.30 33.08 .09142 3.74 0.69 50.00 .09172 1.59 1.03 50.11 .09172 1.63 0.98 66.62 .09200 -0.97 1.43 83.52 .09229 -3.99 1.82
20 8.75 13.01 16.84 24.27 27.82 30.92	t a b.10 ⁴ c.10 ⁶
100 10.29 15.29 19.81 28.45 32.69 36.23 200 12.11 17.95 23.19 33.27 38.07 42.20 250 12.96 19.17 24.76 35.40 40.54 45.01	50% 25 1.09172 1.59 1.03 50 .18927 2.42 0.98
Trautz and Zimmermann, 1935	75 .27481 3.34 0.71 100 .36635 4.13 0.53 125 .45788 4.70 0.42 150 .54940 5.32 0.29 174 .63795 5.91 0.00
8 n % η -183,2°	0%
0.00 3.706 28.0 11.337 21.70 7.021 84.84 12.395 35.75 8.927 100.00 13.110	25 1.09085 6.56 50 .18205 6.80 75 .27407 6.89 100 .36621 6.97 125 .45801 7.05 150 .54994 7.11 174 .63892 7.10
Van Itterbeek, Van Paemel and Van Lierde, 1947 17.2° 0.0 3.78 65.7 26.79 16.1 14.67 79.5 29.01 34.7 20.37 100.0 31.16 50.5 23.00	25 1.09258 -7.30 2.19 50 .18419 -5.13 1.91 75 .27579 -3.34 1.70 100 .36738 -1.83 1.47 125 .45899 -0.32 1.12 150 .55058 +0.97 0.90 174 .63852 +1.66 1.00
For thermal diffusion, see authors.	Trauta and Ludawiga 1920
	Trautz and Ludewigs, 1929
Hydrogen (H ₂) + Argon (A)	19° 100° 200° 250°
Tanner and Masson, 1930 P pv* P pv* 83.52% 25° 124.884 1.07043 126.826 1.07087	0 8.75 10.27 12.11 12.96 5.76 11.62 13.78 16.25 17.41 11.84 13.97 16.63 19.48 20.93 16.49 15.51 18.44 21.67 23.48 25.64 17.27 20.67 24.27 26.94 33.35 18.43 22.14 26.14 28.12 86.91 21.90 26.54 31.64 34.01 100.00 22.10 26.83 32.08 34.44
104.033 .07046 111.047 .08045 92.222 .07134 89.690 .07124 69.639 .07336 70.501 .07313 47.932 .07751 47.405 .07763 29.133 .08201 28.921 .08249 33.299 .03083 35.167 .07989	Trautz and Binkele, 1930
41.316 .07907 42.727 .07868 57.302 .07574 57.787 .07539 76.865 .07200 77.572 .07233 98.698 .07061 100.718 .07091	t 7 0% 34.85% 37.38% 55.43% 70.58%
98.698 .07061 100.718 .07091 119.992 .07097 119.447 .07057 *pv = 1.09229 - 0.0003990 p + 0.00000182 p² pv = a + bp + cp ₂	20 8.75 18.57 18.45 20.56 21.40 100 10.29 22.38 22.75 24.88 25.86 200 12.11 26.36 26.97 29.48 30.70 250 12.96 28.26 28.94 31.64 33.10

100%

22,11 26,84 32,08 34,48

Heath, 1953	Trautz and Heberling, 1934						
% n % п	% n						
18℃	20° 127° 227° 277°						
100 22.2 40 13.8 80 21.6 20 15.0 60 20.4 0 8.8	100 22,60 30,09 36,52 39,54 74,36 22,68 30,11 36,49 39,43 49,33 22,54 29,27 35,71 38,54 20,48 20,38 26,41 31,31 33,58 11,20 17,72 22,54 26,56 28,44 0,00 8,75 10,87 12,49 13,45						
van Itterbeek and van Doninck, 1946							
% velocity of sound -183° -178° -173°							
85,6 189.7 184.5 178.8 54,6 232.0 225.2 218.6 36.1 278.5 270.4 262.3 19.5 358.5 348.0 337.6	Hydrogen (H_2) + 0xygen (O_2)						
	Deutsch, 1907						
For the velocity of sound as a function of pressure, see authors.	mol% Diffusion constant (cm²/sec.)						
	15° 760 mm 25 0.767						
	25 0.767 50 .777 75 .804						
	.001						
Ibbs and Hirst, 1929							
% heat conduct106 % heat conduct106	Jockmann 1996						
00	Jackmann, 1906 mol mol Diffusion constant (cm²/sec.)						
100.0 39 40.0 187 91.0 55 19.8 270	15° 760 mm						
$\begin{bmatrix} 82.0 & 73 & & & & & \\ 60.0 & & 125 & & & & & \\ \end{bmatrix}$	25.2 0.767						
	50.0 0.759						
Hydrogen (H ₂) + Xenon (Xe)	Klein, 1905						
Fuell 1055	% t n t n t n						
Ewald, 1955 mol % P mol % P	0.00 13.0 8.73 100.4 10.50 183.8 12.12 5.21 14.7 10.91 99.5 13.08 183.1 15.00 8.78 14.0 11.88 100.1 14.03						
-11 <i>8</i> °	15.61 12.8 13.51 99.3 16.50 183.3 18.90						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	33,33 18.5 16.90 99.4 20.33 182.6 23.40 56.78 14.2 18.73 100.2 22.84 - - 81.26 19.6 20.17 99.8 24.32 183.4 28.17						
14.5 4.06 2.45 26.65 11.8 4.47 1.71 45.03	95.55 14.7 20.12 100.0 24.84 183.6 28.91						
11.8 4.47 1.58 52.58 7.62 6.92 1.35 72.04	100.00 16.75 20.24 99.74 24.88 185.8 28.91						
7.64 6.99 1.33 87.2 7.00 7.87 1.52 110.9 5.50 10.19							

Schmidt, 1909	van Itterbeek and De Clippeleir, 1947
t n t n t n	% t (ε-1). 10 ⁶
0% 5,21% 8,78%	406 mm
14.5 8.77 14.7 10.91 14.0 11.88 100.5 10.46 99.5 13.08 100.1 14.30 185.3 12.12 183.1 15.00 15.61% 33.33% 56.78% 12.8 13.51 18.5 16.90 14.2 18.73	0 30.00 222 12 30.12 234 27 30.03 270 52.8 29.92 321 75.4 30.22 393 92 30.01 470
12.8 13.51 18.5 16.90 14.2 18.73 99.3 16.50 99.4 20.33 100.2 22.84 183.3 18.90 182.6 23.40 81.26% 95.55% 100%	100 30.31 540
19.6 20.17 14.7 20.12 16.8 20.23 99.8 24.32 100.0 24.84 99.7 24.85 183.4 28.17 183.6 28.91 185.8 28.85	Wassiljewa, 1904
	% heat conduct. 106 % heat conduct. 106
Trautz and Norath, 1926	0 397.6 80 98.9 5.26 374.4 84.62 91.9 14.29 321.7 87.5 83.4 25 274.9 93.94 71.4 33.33 237.3 96.64 65.1 50 182.7 100 63.3 75 111.2
33.3 10.76 100 20.14 50 12.26 Trautz and Melster, 1930	Mallard and Le Chatelier, 1880 vol% wt% t° of inflammability
mol% 7 26.9° 126.9° 226.9° 276.9°	15 73.84 560 - 570 30 87.27 552 - 569 66 96.89 530 - 532
100 20.57 25.68 30.17 32.20 81.65 20.19 25.07 29.50 31.47 60.55 19.25 23.81 27.90 29.78 39.70 17.84 21.92 25.56 27.33 21.92 14.94 18.58 21.58 22.88 13.67 13.14 16.02 18.67 19.91 4.14 10.53 12.82 14.88 15.89 0.00 8.89 10.87 12.59 13.81	Cassel, 1916 mol % inflammability
	t P
van Itterbeek, Van Paemel and Van Lierde, 1947	14.3 658 75 20.0 593 64 33.3 492 39 50.0 453 33 60.0 394 24 80.0 429 30
20.4° 0 8.85 52.7 18.68 16.1 14.09 67 19.54 27.3 16.15 100 20.40 38.0 17.39 For thermal diffusion, see authors.	

wichelson, 1889 vol% speed of inflammability (cm/sec.) room temp. 80.57	(see a) + Nitrogen system : Ni 31		+ Ammoni	ia) .
16, 19 582	P	7.	v	P	78	
78.17 161 F		53.0 58.0 61.3 65.5 71.7 79.3 45.1 52.1 66.6 75.2 68.9 69.3 70.4 74.8 78.1 81.9 77.8 81.9 81.1 80.5 80.9 81.1 80.5 80.9 82.7 82.7 82.7 82.7 82.7 82.7 83.7 84.8 85.4 84.8 85.4	V -185° 49.2 28.8 25.5 21.7 17.9 13.4 -195° 38.3 30.0 24.1 18.7 16.0 10.5 -205° 14.6 11.9 11.7 13.0 9.7 9.2 7.8 5.6 -210° 7.1 - 4.3 3.2 4.3 + L + C P 06 150,3	56.09 41.04 26.76 17.01 2.39 79.90 55.56 36.59 17.19 1.10 89.67 89.55 55.88 45.89 35.98 26.58 89.55 56.03 55.50 46.11 36.30 26.70 17.19 0.12	90.8 94.7 97.6 100.0 82.5 88.1 92.7 97.7 100.0 95.3 84.6 90.6 92.4 93.4 96.7 100.0 85.7 88.0 87.9 92.2 91.5 91.7 92.4 94.3 95.9 97.3 97.3 97.5 98.0 100.0	V 13.8 14.7 16.7 23.0 100.0 7.8 6.3 7.0 9.5 100.0 4.7 4.5 2.7 2.1 2.4 2.7 100.0 5.2 3.7 - 2.6 1.6 1.8 1.6 1.9 2.0 1.6 - 1.3 100.0

	,	apour									
P	%	F)	%		Trai	utz and F	Emert, 193	26		
		-212.5°				1	p	exces	s pressur	e (Dalton	law)
205. 186.	05 - 4.76		1.18 1.07	2.33 2.58			22.8	3°			
136. 176. 176.	05 5.18 39 4.74	3 89	6.22	$\frac{3.21}{1.38}$		74	45	(0.13		
176.	38 4.64 77 4.60	5	1.96 0.44	0.78 0.89							
166. 128.	15 3.28	3 17	7.47	1.29							
128.	15 3.84	-215°				Ba r	tlett, 19	27			
215.	16 4.3	7 128	8.19	2.42		1 %		PV/)	P. ♥ .		
186. 166.	80 2.97	7 58	0.22 5.95	$\substack{\textbf{1.64}\\\textbf{0.78}}$		P	,	F0	100		
128.	. 22 1.85	5 20	5 .7 4	0,34			1	50	100	200	300
====						$=$ $\begin{bmatrix} 0 \\ 11.5 \end{bmatrix}$	1.0000 .0000	1.0337 $.0318$	1,0665 ,0621		1.2099 .2072
Ch+c	ekkel and 1	Csin 1090) (fi	σ. 1		24.6	.0000	.0270 .0199	.0580		.2037
			P P	mo1%		- 44.9 54.1	.0000	.0174	.0398	. 1053	.1990 .1870
P	mol? L	v V	r	L IIIO179	V	65.9 74.0	.0000	.0101	.0280 .0201	.0801	. 1760 . 1682
	 -183°			-185.5°		- 86.3 93.9	.0000	0.9958 .9905	.0042 0.9948	.0619 .0505	. 1546 . 1456
2 10	100 96	100 51	10 15	100	100 82	100.0	.0000	.9846	.9846	.0392	.1386
20	94	27	20 30	96	72 58	P	400	600	800	1000 atm	
30 40	9 2 89	$\frac{21}{19}$	40	92 91	51						
60 70	83 81	17 17	50 60	87 82	4 7 45	0 11.5	1,2827 ,2842	.4422	1.5 72 3 .58 7 5	1.7148 .7551	
80 90	78 74	$\frac{18}{20}$	80 90	73 64	49 56	24.6 44.9	.2892 .2898	.4597 .4810	.63 2 5 .6804	.803 7 .8 77 6	
94	72	21	91	62	62	54.1 65.9	.2845 .2 7 55	.4855	.6925 .7198	.9039 .9386	
18	~160° 100	100	50	-160° 88	60	74.0 86.3	.2720 .2659	.5029	.7198 .7365 .7671	.9667 2,0193	
$\frac{20}{30}$	99 95	9 2 73	60 7 0	82 77	59 61	93.9	.2645 .2589	.5228	.7831 .8021	.0436	
40	92	65	74	66	66	100.0	. 2009	,0200	.0021	.0094	
====						= %		d	(g/1)		
wish		1000					latm.	50 atm.	100 atm.	200 atm.30	00 atm.
————	e and Gadd		- -			0.0	0.0898	4,3436	8,420	15,777 23	2,266
%	25 atm.	PV 200 atm	, ,	1000 atm.		11.5 24.6	.2233 .3754	10.820 18.276	21.024 35.482	39.539 53 66.524 9	5.492 3.561
	20 atm.	00		1000 atm.		- 44.9 54.1	.6110 .7179	29.953 35.281	58.418 69.042	109.47 15:	2.87 1.44
0	1,0520	1.1327		1.7036		65.9 74.0	.8548 .9489	42.312 42.204	83.151 93.020	156.44 21	8.06 3.68
12.5 24.4	.0136	.1317		.7563 .7989		86.3 83.9	1.0917 1799	54.815	108.71 118.60	205,61 28	3.65 8.98
48.2 73.8	1.0062 0.9999	. 1081 . 0 7 89		.8829 .9727		100.0	2507	63.513	127.03		9.71
100.0	0.9910	.0363 100°	2	2.0676							
0	1.3327	1.5069	2	2.0780		8	400 a		d tm. 800 a	tm. 1000 a	t m
12.5 24.4	-	.5111 .5148		.1338						-	
48.2 73.8	1,3512	.5142 .5054		.2813 .3834		$\begin{bmatrix} 0.0\\11.5 \end{bmatrix}$	28.003 69.553	37.765 92. 899	111.82	127.23	
100.0	1.3747	.4889 300°		.4857		24.6 44.9	116.47 189.49 223.56	154.31 247. 53	183.96 290.88	208.12 325.41	
0	2.1293	2,2393	2	2.8026		44.9 54.1 65.9	223.56 268.07	289.96 343.04	339.33 397.62	377.06 440.93	
12.5 24.4	.1322 .1323	.2499 .2596		.8702 .9323		74.0 86.3	298.40 344.96	378.82 432,38	437.16	482.48 540.63	
48.2 73.8	.1363 .1432	. 2755 . 2914		3.0554 .1842		93.9	373.23 397.39	464.89 491.98	494.23 529.37 555.21	577, 36	
100.0	. 1469	.3127		.3203		100.0	377,09	771.70	JJJ . ZI	604.37	
ــــــــــــــــــــــــــــــــــــــ											

Bartlett and Cup	oles, 1928	Bartlett, Hetherington and al., 1930
P	PV/P _o V _o	P PV/P _o V _o
0° 50°	99.85° 198.9° 299.8° 399.3°	
1 1.0000 1.18. 50 0.9846 .18. 100 0.9846 .20. 200 1.0365 .27. 300 .1335 .37. 400 .2557 .48. 600 .5214 .74. 800 .7959 2.01. 1 1.0000 1.18. 50 .0330 .21. 1 0.0639 .252 200 .1336 .322 300 .2045 .388 400 .2775 .472 600 .4226 .616	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1 .0735 .9082 .8162 .7432 29 .25
800 .5665 . 75 8 1000 .7107 .900		20° -25° -50° -70°
0° 25° 1 1.0000 1.091 50 .0269 .121 100 .0583 .154 200 .1278 .220 300 .2064 .299 400 .2890 .380 600 .4587 .551 380 .6342 .721 1000 .8029 .890	9	759449 .8484 .7704 8 1259760 .8753 .7951 1509909 .8903 .8096 7 200 1.2014 1.0265 .9259 .8433 9 300 .2808 .1025 1.0007 .9185 9 400 .3622 .1831 .0837 1.0023 6 5002679 .1696 .0901 6 600 .5327 .3547 .2570 .1776 6 800 .7042 .5277 .4309 .3536
		P 0% 20° -25° -50° -70°
		20° -25° -50° -70° 0 1.0719 0.9073 0.8159 0.7428 1 .0732 .9085 .8170 .7438 25 - .9230 .8307 .7566 50 - .9384 .8447 .7703 75 - .9540 .8598 .7852 100 1.1391 .9706 .8756 .8003 125 .1558 .9867 .8922 .8155 150 .1731 1.0034 .9082 .8306 200 .2079 .0383 .9411 .8640 300 .2799 .1093 1.0112 .9340 400 .3511 .1808 .0832 1.0075 500 .4240 .2542 .1568 .0804 600 .4958 .3272 .2301 .1555 800 .6391 .4717 .3755 .3018 1000 .7795 .6139 .5185

Bennett and Dodge, 1			Jackman				
p pv/p _o v		pv/p _o v _o	_	Diffusion	constant	(cm ² /sec.)
25° 3024.55 4.2281 2817.97 4.0131	1999.01	5° 3.1875 2.6477	23.5 50.0	0	.746 .736		·
2476.57 3.6876 2286.86 3.4924 50°	1006.64	2.0864 0°		005			
3020.86 4.3489 2506.94 3.8259 2027.05 3.3240 75°	1003,81	2.7695 2.1860	Kleint,	% %	t	n	
3004.26 4.4310 2493.05 3.9181 2009.84 3.4090 100°	1004.64	2.8674 2.2900 0°	8	00.00 30.03 63.80 46.45	14.6 15.7 14.2 14.6	17.42 17.14 16.59 15.85	
2995.79 4.5278 2514.50 4.0436 2009.56 3.5121 125°	1499.63 985.62	2.9562 2.3695 5°		17.39 6.32 0.00	17.0 16.7 13.0	13.28 11.16 8.73	
3019.91 4.6523 2518.87 4.1494 2025.93 3.6292	1496.74 1005.49	3.0552 2.4975	8	00.00 80.03 63.80 16.45	99.8 99.6 99.7 99.8	21.25 20.77 20.11 19.21	
25°	43.5 %	5°	1	17.39 6.32 0.00	99.9 99.9 100.4	15.93 13.29 10.50	
3034.07 2499.21 2032.20 3.3856 2.9744	1505.60 10 0 7.58	2.4835 1.9941 0°	11 8	00.00	182.8 183.1 183.4	24.59 24.05 23.21	
2989.17 3.9111 2488.95 3.4841 2025.49 3.0645 75°	1518.37 998.03	2.5910 2.0831 5°		33.80 46.45 17.39 6.32 0.00	183.4 183.2 183.2 183.8	22.16 18.29 15.29 12.12	
3028.66 4.0472 2497.34 3.5927 2006.95 3.1446	1506.91 994.99	2.6792 2.1790					
3005.95 4.1274 2491.47 3.6868 2000.70 3.2405	1517.44 995,42	2.7871 2.2768	Schmidt,	ηη		t	n
2993,92 4.2212 2520,10 3.8610 2009,38 3.3497	1511.00	2.8805 2.3859	14.0 101.1	17.38 21.34	100 % 18	33.0	24.64
	24.7 %		15.7	17,14	80.03 %	33.1	24.05
25° 3001.29 3.4441 2519.53 3.0976 2016.46 2.7193	1552.27 1000.27	5° 2.3282 1.8961	99.6	20.77	63.80 %		24.05
50° 2995.41 3.5368	1502.61	0° 2.4081 1.9906	.14.2		18 46.45 %		23.21
75° 3024.59 3.6529 2486.79 3.2626 2011.89 2.9049	1503.82 999.33	2.5042 2.0890	14.6 99.8		18		22.16
3027.48 3.7516 2483.75 3.3563	6 1495.7 1 8 995.04	2.5912 2.1785	17.0 99.9	13.28 15.93	18 6.38 %	32.2	18.29
2019.73 3.0038 125° 2994.57 3.8266 2491.87 3.4562	1528.15	5° 2.7135 2.2788	16.7 99.9	11.16 13.29	0 %	33,2	15.29
2028.19 3.1037 B.N. Volume is expr in mm .	•		14.5	8.77 10.46		35.3 	12.12

	
Trautz and Narath, 1926	Heath, 1953 (fig.)
8 n 8 n	% п % п
15°	18°
0 8.77 66.7 12.66 25 9.42 75 14.20	100 17.4 40 14.6 80 16.8 20 12.5 60 16.0 0 8.8
25 9,42 75 14,20 33,3 10,07 100 17,44 50 11,18	60 16,0 0 8.8
	•
	van Itterbeek and Vandoninck, 1944
Trautz and Baumann, 1929	P velocity of sound P velocity of sound
% n	-183.0°
	190% 79.8%
0 6.76 7.54 8.74 19.23 9.86 11.16 13.05	0.750
20.49	- 1 - 608 192.0 410 216.1
32.81 33.28 11.00 12.53 14.72	416 192.5 .204 216.8
49.19 15.98 49.47 - 15.98 50.63 11.83 13.61 -	11 . 292 192. 8
50.63 11.83 13.61 - 79.79 12.46 14.40 17.03	.182 192.4 .165 192.5
81,95 100,00 12,63 14,64 17,39	.105 192.7
+100° +200° +250°	77.7% 61.6% 0.693 218.5 0.713 245.2
0 10.30 12.12 12.97	.571 218.8 .609 245.4
19.23 20.49 15.53 18.27 19.52	342 219.0 .412 245.7
32.81 17.42 20.56 22.02 33.28	.214 219.6 .292 245.9 .091 219.8 .118 246.2
49.19 _ 22.30 23.85 49.47 19.00	54.5%. 45.0%
50,63	0,547 260,4 0,688 285.6
79.79 81.95 20.50 24.12 25.75	.414 260.6 .625 285.9 .291 260.9 .518 286.1
100.00 20.84 24.61 26.29	. 195 261.1 . 342 286.1 . 088 261.1 . 210 286.4
	.095 286.6
	30.2% 0% 0.704 340.4 0.981 772.8
	.590 340.5 .610 772.7
van Itterbeek, Van Paemel and Van Lierde, 1947	.478 340.5 .409 772.7 .403 340.5 .314 772.9 .304 340.6 .192 772.8
% n % n	. 195 340.6 . 192 772.9
+18.9° +17.9°	.091 340.7 .118 772.7
0 8.82 0 8.77 13.6 12.16 16 12.51	
18.7 13.05 44.1 15.60	
40.0 15.44 75.9 16.77	
51.7 16.13 86.6 17.42 69.0 16.84 100.0 17.52	
100.0 17.46	
-183.0° -191.0° 0 3.92 0 3.62	
16.0 5.23 16 4.73 35.1 6.04 35.1 5.09	
44.1 6.20 44.1 5.19 62.0 6.29 62 5.33	
75,9 6,40 76 5,37	\$
86.6 6.45 100.0 5,44 100.0 6,51	
	\$

		p	luminosity	p	luminos	ity
Ferry, 1898		current(2	6
p luminosity			65	342 Å		
current (M.A.) 2 4 6563 Å 0%	6	3.32 1.75 0.75	5% - 1 1 1 2 4 3 6	2.75 1.73 0.80	36% 10 11 14	28 30 40
3.8 4 8 2.7 6 12 1.4 3 16 0.7 10 20	13 18 23 29	3.95 2.35 0.80	3 6 47% 13 40 14 42 19 58	0.35 4.11 1.73 0.80	17 71% 15 22 30	48 45 65 92
3.32 5 9 2.24 6 12 1.75 7 14 0.83 10 20 0.35 15 29	15 19 22	0.38 3.60 2.75	23 70 91% 27 80 28 84	0.35 4.4 2.2 1.3	35 100% 26 29	78 88
36% 1.73 4 8	- -	0.80 0.45	42 125 47 140	1.3 0.7 0.3 622 Å	45	108 133 158
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-		5%	022 A	36%	
0.75 4 8 0.39 7 15	<u>-</u> -	3.32 1.75 0.75 0.38	3 7 4 10 7 16 7 17	2.75 1.73 0.80 0.35	16 18 23 27	45 50 65 7 5
3.32 invisible 1.75 barely visible 0.75 1 0.35 2	invisible barely visible 2 2 5	3.95 2.35 0.80 0.38	47% 21 62 23 68 31 95 38 115 91%	4.11 1.73 0.80 0.35	71% 33 36 44 59 100%	100 105 134 175
0.75 1 0.35 2 36% 2.75 7 1.73 8 0.80 10 0.35 13	- 5 - 19 - 20 - 25 - 30	3.60 2.75 0.80 0.45		4.4 2.2 1.3 0.7 0.3 701 Å	47 48 56 65 83	145 148 168 193 257
47% 3.95 8 2.35 9 0.80 13 0.38 17 71%	- 24 - 26 - 38 - 50	3.32 1.75 0.75 0.35	5%	2.75 1.73 0.80 0.35	36% 13 16 21 23 71%	35 43 58 64
4.11 13 1.73 16 0.80 19 0.35 24	- 40 - 47 - 55 - 70	3.95 2.35 0.80 0.38	20 60 22 65 27 80 33 100 91%	4.11 1.73 0.80 0.35	32 35 43 48 100%	95 105 120 145
3.60 18 2.75 19 0.80 27 0.45 31	- 56 - 56 - 80 - 92	3.60 2.75 0.80 0.45	41 122 42 125 53 160 59 180	4.4 2.2 1.3 0.7 0.3	44 49 53 61 68	133 145 160 178 215
4.4 17 2.2 20 1.3 25 0.7 27 0.3 35	36 54 - 61 - 73 - 83 - 109					

* mo1%

 Br_2 ($HBr + Br_2$)

		eare, 1942		
mol %	2n	d Virial o	oefficient B units . 10 ⁴	12
0	2 5°			
48.17	(?)	+6.60 +6.31		
100		_2.00		
¥77		-		
Kudryav %	tsev, 194	7 (fig.) a (cm	11	
	17°	947 KHz H		
100				
80 60		0.6		
40		0.25 0.6 0.9 1.2		
20		1.5		
	sound abe	1,8	efficient.	
			orricition,	
	t cond.10		heat cond. 10	6
100.0	55	20.5	252 257	
84.1	80 127	$\substack{19.7\\0.0}$	404	
34.8	192			
van Itte	rbeek, 19	D5.5		
Thermodi	ffusion h	y ultraso	unds method (see author
Hydroge	n (Ho)	+ Chlorine	· (c1.)	
, 8			(0,2)	
Maass ar	nd Mc Int	osh, 1912		
%(HC1)*	f.t.	%	f.t.	
	-112.0	32.4	-112.4	
100.0	124 6	19.9 13.0	107.9 103.6	
79.5	124.6	13.0		
79.5 72.4 59.4	$126.6 \\ 122.1$	$\substack{13.0\\0.0}$	-101,5	
79,5 72,4	126.6 122.1 -120.5	13.0 0.0	-101.5	

Traut	z and Narath,			
t	η	t	η	
	745 - 760) mm 		
	0%	31.5	6 mo1%	
20.4	8.91 9.08	252.3	25.16	
27.0 53.0	9.61	34.9	5 mo1%	
101.0 156.0	10.5 7	152.6	20.93	
199.0	11.59 12.34 13.23	197.0 200.0	22.89	
250.3			23.04	
70 OF	10.15 mo1%		0 mo1%	j
$\substack{19.85\\56.0}$	13,38 14,76	$\begin{array}{c} 17.1 \\ 50.0 \end{array}$	14.50 16.12	ļ
100.0	14.76 16.33	99.0	18.55	{
	12,05 mo1%		4 mo1%	1
157.3	18.77 20.24	250.0	25,27	- 1
200.0	20.24 14.95 mo1%	41 1	0 mo1%	
250.0	22.81		14,66	
400,0		$\frac{21.9}{50.0}$	16.06	
00.7	24.75 mo1%	99.0	18.48	}
98.7 154.4	18.30 20.55		9 mo1% 20,84	Í
	25.20 mo1%	$\begin{array}{c} 150.8 \\ 198.0 \end{array}$	23.02	
$\frac{23.3}{51.0}$	14.82	100		
51.0	16.11	20.5 53.0	14.31 15.95)
	25.89 mo1%	98.0	15.95 18.27	
200.0 250.2	22.61 24.55	151.0 202.0	20.81 23.12	1
200,2	21,90	251.0	25.34	
				
Hydro	gen (H ₂) +	Bromine (Br ₂)	
Büchn	er and Karste	en, 1908 -	09	
mo1%*	wt%	f.t.	E	
0.0	0.0	-87.3	_	
1.2 3.3	2.34	-88	-94	
3.3 9.6	2.34 6.31 17.34 29.38 47.71	-91 - 7 3.5	-95 -95.5	
9.6 1 7. 4	29.38	-61.5	-96	
$\begin{array}{c} 31.6 \\ 41.0 \end{array}$	47.71 57.84	-48 -41.5	-93 -95	
50.5 55.8	66.83 71.38	-35.5 -32.5	-	
69.0	81.47	24 5	-	
77.6 87.7	87.25 93.37	-19.6 -13.4	-	
07.7	20.07	-10,,	-	

Deuterium (D_2) + Argon (A)

van Itterbeek and Van Doninck, 1946

%	t	velocity of sound (m/sec.)	
68.4	_183	200.5	
68.4 68.4	- 188 - 193	195.1 189 .2	

For the velocity of sound as a function of pressure, see authors.

Deuterium (D_2) (para + ortho)

Urey and Teal, 1935

%	t equil.	%	t equil.	
100.00 97.97 79.19 67.82 66.75	-273 -253 -223 -173 -123	66.67 66.67 66.67 66.67	-73 -23 0 +27	

Deuterium (D_2) + Tritium (Tr)

Kerr, 1952

50% atom.

t	molar volume	t	molar volume
-249.10	24.11	-251.41	23.39
249.88	23.79	252.04	23.09
250.52	23.68	252.43	23.05
250.60	23.695	253.60	22.66
-250.70	23.53	-253.61	22.74

Helium (He⁴) + Helium (He³)

Eselson and Bereznyak, 1955 (fig.)

Eserson and berezhyak, 1700 (11g.)						
beginning of condensation						
t		1	p			
	0%	1.9%	4.0%	11.0	5%	
-271.45 271.05 270.65 270.25 269.85 -269.65	2 10 36 86 170 220	- 38 95 180	16 45 102 195	4 18 52 120 225 280		
t	29.0	0%	p 35.4%	57.6	5%	
-271.45 -271.05 -270.65 -270.25	5 2 5 7 5 15 5 21	2 0	35 86 176 236	15 50 125 255	;	
t	73.	4%	p 82.4%	100	0%	
-271.65 271.45 271.05 270.65 -270.45 end of			20 36 110 230 295	50 82 135 336		
t end of			p			
	0%	0.4%	0.8%	1.9%	3.0%	
-271.05 -270.65 -270.25 -269.85 -269.45 -269.25	5 22 65 135 180	6 26 75 145 190	8 30 80 160 210	5 10 35 88 175 225	5 15 42 100 190 245	
t	4.0%	6.3%	p 8.3%	11.1%	13.4%	
-271.05 270.65 270.25 269.85 -269.45	12 20 50 110 210	15 25 60 125	18 30 70 145 255	22 36 85 160 285	25 45 95 185 305	
t	16.7%	19.2%	p 22.	.6%	23.9%	
-271.05 270.65 270.25 269.85 -269.45	22 55 114 200 340	25 65 135 230	30 70 142 250	2	36 85 166 2 85	

t	30.2%	p 38.3%	52.7%	56.3%	Helium (He) + Neon (Ne)	
-271.05 270.65 270.25	50 105 195	60 125 230	75 165 290	180 310	Nasini and Rossi, 1928	
-269.85	330	<u>-</u>	-	~	π 11° 100°	
t	73.4%	p 82.4%	90.8%	100%	0.00 19.29 23.35 3.40 20.00 24.18 28.61 24.20 29.21	
-271.45 271.05 270.65 270.45	45 110 220 285	56 130 255 330	68 150 288 370	75 180 338	49.95 26.60 32.00 68.04 27.80 33.62 78.50 28.45 34.31 90.91 29.17 35.25 94.61 29.31 33.35 99.00 29.50 35.49	
1	on, Berez		nganov, 195	6	Trautz and Kipphan, 1929	
mo1%	tr.t	, mo19	tr.t	•	- % n	
91.7 88.9	-271.0 271. 271.	14 76.	l 271.	34	20° 100° 200°	
86.6 83.3 80.8	271. 271. -271.	23 61.7	3 271. 7 271.	45 57 	79.59 30.04 35.20 41.04 42.19 26.91 31.58 36.84 21.26 24.03 28.26 33.03	
Eselso	n and La	zarov, 1954	ı		Trautz and Binkele, 1930	
%	_270,80°	P crysta -271,10°	11. (Kg/cm -271.40		t n n 100%	
0 25 50 58	50 61 73 78	38 48 58 63	30 37 45 50	26 30 38 43	20 19.41 24.29 27.02 29.71 30.92 100 22.81 28.46 31.71 34.79 36.23 200 26.72 33.27 37.02 40.56 42.20 250 28.53 35.55 43.10 45.01	
Walte	Walters and Fairbank, 1956 (fig.) Trautz and Zimmermann, 1935					
8	sat.t.		sat.t.		% n % n	
10 20 40 50	-272.84 272.66 272.42 -272.36	70	-272,32 272,40 272,62 -272,78		-183° 0.00 8.841 68.82 12.738 12.09 9.994 86.55 13.042 20.39 10.661 100.00 13.110 38.27 11.709	

Van Itterbeek, Van Paemel and Van Lierde, 1947	t a b.10 ⁴
% n	0%
21,7°	25 1.09188 5.15 50 1.8352 5.08 75 27500 5.01
40.7 27.221	100 .36671 4.98
39.0 26.425 37.9 26.097	125 .45875 4.89 150 .55137 4.85
For thermal diffusion, see authors.	174 .63776 4.87
	For 100%, see : Hydrogen + Argon
Atkins, Bastick and Ibbs, 1939	
vol% k _t	Lonius, 1908
80 0.0531	mol% Diffusion constant (cm²/sec.)
70 .0724 60 .0864	15°
50 .0970 40 .1004	27.3 31.5 ,693
k ₊ = Thermal diffusion coefficient for 15°	67.7 .712 76.3 .730
and 100°	
Helium (He) + Argon (A)	Tanzler, 1906
	% n
Tanner and Masson, 1930	0° 100° 183°
$pv = a + bp + cp^2$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
% a b.10 ⁴ c.10 ⁶	95.074 21.32 27.45 32.18 90.930 21.43 27.68 32.44
2 5°	90.930 21.43 27.68 32.44 85.715 21.53 27.84 32.54 80.744 21.66 27.90 32.50 77.055 21.65 27.85
16.43 1.09113 5.69 0.08 17.06 .09107 5.63 .11	11 68 458 21 66 27 77 32 53 1
33.45 .09143 5.13 .23 50.07 .09172 3.89 .42	1 61.193 22.07 28.07 32.44
50.11 .09172 3.58 .60	1 29.147 21.89 27.52 - I
65.45 .09200 0.94 1.14 83.55 .09230 -2.79 1.79	19.215 21.42 26.58 30.39 0.000 18.91 23.48 26.99
	% t n % t n
t a h.10 ¹⁴ c.10 ⁶	100,000 12.0 22.00 68,458 22.1 23,16
50.11%	95.074 12.6 22.19 61.193 21.6 23.41
25 1.09172 3.58 0.60 50 .13321 4.14 .52	85.715 13.7 22.44 29.147 19.1 23.03
75 .27475 4.49 .53 100 .36629 5.14 .29	80.744 19.7 22.94 19.215 18.9 22.46 77.055 20.5 23.01 0.000 15.3 19.69
125 .45780 5.66 .12	
150 .54931 6.00 .08 174 .63782 6.28 .00	
}	

Cabaida 1000		Rietve	eld. Van I	tterbeek an	d van den Ber	rg, 1953
Schmitt, 1909	 η	%	n	%	η	
	0.930%			17.99		
13.17 22.07 12.6 22.19 11.3 99.70 27.51 99.8 27.45 99.6 183.30 32.43 182.7 32.18 183.1	22.17 27.68 32.44	100 82.6 65.2 55.1 53.2	21.76 22.28 22.70 23.06	100 88.6 80.35 79.9	21.73 22.23 22.43 22.40 22.81	
13.7 22.44 19.7 22.94 20.5 99.9 27.84 99.6 27.90 99.8 184.3 32.54 183.1 32.50	23.01 27.85	45.2 38.45 35.05 25.2 15.45	23.02 22.93 22.96 22.75 22.46 21.76	70.8 61.8 49.0 46.1 40.6 29.8	22.94 23.09 23.11 23.04 22.90	
22.1 23.16 21.6 23.41 20.9 99.5 27.77 99.4 28.07 99.5 183.1 32.53 183.6 32.44 29.147% 19.215%	23.34 27.85	0 -43,		19.6 10.3 0 -80.		
19.1 23.03 18.9 22.46 17.6 99.9 27.52 99.8 26.58 18.7 183.0 30.39 99.8 183.7	19.67 19.80 23.37 26.81	100 88.65 80.5 80.0 71.0 62.1 46.4 40.9	17.68 18.08 18.33 18.38 18.54 18.70 18.96	100 88.7 80.55 80.1 71.1 62.2 49.4 46.5	15.38 15.74 15.96 15.94 16.13 16.25 16.62 16.58	
Trautz and Narath, 1926		30.1 19.9 10.5 0	19.17 18.74 17.99 16.44	41.1 30.3 20.0 10.55	16.81 16.88 16.64 16.07 14.60	
15° 0 19.60 66.7 18.26 25 17.97 75 19.42		%	~ 183°	-192,1°	-201.2°	
25 17.97 75 19.42 33.3 17.48 100 22.17 50 17.52		100 82.8 65.7	7.60 8.28 8.61	7.05 7.37 7.97 8.28	6.35 6.79 7.21 7.52	
Trautz and Kipphan, 1929		65.7 55.7 53.8 45.85 39.1 35.7	8.89 8.95 9.35 9.48 9.69	8.28 8.55 8.72 8.83	7.57 7.78 8.01 8.08	
π 20° 100° 200°		25.8 15.9 0	9.69 9.71 9.12	9.19 9.02 8.59	8.45 8.34 7.98	
36.60 22.86 27.50 32.61 59.66 23.04 27.87 32.88 75.65 22.70 26.87 31.54	(Heath	, 1953 (f	ig.)		
		%	η	%	η	
Trautz and Binkele, 1930		100 80	22.2	18° 30 10	23.2 21.5	
t n 0% 50,94% 61,80% 65,95%	100%	60 45	22.9 23.2 23.5	0	19.0	
20 19.73 22.96 22.91 22.78 100 23.20 27.50 27.45 27.36 200 27.15 32.50 250 29.03 34.88	22.11 26.84 32.04 34.48	Wachsmu	th, 1909	and Ibbs and	d Hirst, 1929).
		78	heat co	nd.106	% heat	cond.106
		100.00 72.96 54.63	38.9 74.1 107.7	5 .	5.32 232 5.39 293 0.00 338	.00 3.90 3.60

Van Itterbeek and Van Doninck, 1946	Trautz and Heberling, 1934
% velocity of sound (m/sec.) -183° -188° -193°	mol% 7 227° 277°
100 176.0	100 22.60 30.09 36.52 39.54 66.82 23.89 31.41 37.78 40.75 48.41 24.75 32.20 38.48 41.41 24.70 25.50 32.48 38.29 40.99 9.88 24.29 30.28 30.29 37.63 0 19.41 24.04 28.92 29.77
% velocity of sound (m/sec.)	
-183° -188° -193° (0.7-0.1atm.) (0.6-0.1atm.) (0.4-0.1atm.) 21.4 326.5 - 327.0 317.0 - 317.5 307.5 - 308.5 43.6 250.5 - 251.5 243.5 - 244.5 236.0 - 237.5 61.4 217 - 218.5 211.0 - 212.5 204 - 205.5 87.3 185.5 - 187.5 179.5 - 182.0 175 - 176.5	Atkins, Bastide and Ibbs, 1939 vol %
Atkins, Bastide and Ibbs, 1939	90 0.0211 80 0.0422 70 0.0618 60 0.0810 50 0.1007 k ₊ = Thermal diffusion coefficient .
vol% k _t (15° - 100°)	
90 0.0250 80 .0476 70 .0660 60 .0810 50 .0931 k _t = Thermal diffusion coefficient	Helium (He) + Krypton (Kr) Nasini and Rossi, 1928
Helium (He) + Xenon (Xe)	% л % п 16° 100° 16° 100°
Ewald, 1955 P mol% P mol%	0.00 19.52 23.35 70.98 25.16 31.27 10.21 23.35 27.85 81.00 24.93 31.15 20.46 24.97 30.01 88.45 24.75 30.96 30.86 25.61 31.09 94.54 24.64 30.76 49.95 25.59 31.42 100.00 24.41 30.68
-118° 4.40 11.9 30.1 1.73 4.40 11.7 .76 4.47 11.3 30.3 .75 4.47 11.4 39.9 .30 4.61 11.0 .34	Atkins, Bastide and Ibbs, 1939 vol % k _t (15°-100°)
4.61 11.1 49.9 .10 6.58 7.89 .09 6.58 7.84 54.8 .00 8.42 6.05 .03 6.05 81.8 0.67 13.2 3.85 99.9 .59 3.73 .62 16.7 3.11 107.5 .55 26.5 1.98 .54	70 0.0677 60 0.0852 50 0.1000 40 0.1080 30 0.1068 k _t = Thermal diffusion coefficient.

Helium (He) + Nitrogen (N ₂)	66.8% 250 -2.26 -2.42 -3.00 -3.54 200 -0.93 -1.22 -1.84 -2.53
Edwards and Roseveare, 1942	150 +0.78 +0.38 -0.34 -1.19 100 +2.97 +2.52 +1.52 +0.56 50 +6.00 +5.34 +4.03 +2.83
mol% 2 nd Virial coefficient B ₁₂	0 +10.28 +9.38 +7.44 +5.93 -50 +17.42 +15.84 +12.53 +10.08 -87.5 +26.65 +24.03 +18.76 +14.58
25°	83.4%
0 5.26 48.17 (?) 5.60 100 -2.00	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Pfefferle, jr., Goff and Miller, 1955 Virial coefficients at 30°	-87.5 40.67 +36.79 +28.41 +21.57
mo1% B . 10 ⁴ C . 10 ⁶	t Joule-Thomsen coefficient
(atm. ⁻¹) (atm. ⁻²)	P 140 180 200 Atm.
100 -1.68 +2.400	24.5%
78,392 +2,099 +1,505 49,253 +5,066 +0,597 19,651 +5,590 +0,141 0 +4,778 +0,056	250
Heath, 1953 (fig.)	_50
πeach, 1255 (Fig.) π π π π η	49.0% 250 -4.91 -5.03 -5.05
18° 100 17.4 40 19.0 80 17.8 20 19.2 60 18.4 16 19.5	200
0 19.0	-50 +2.62 +1.41 +0.89 -87.5 +4.82 +3.29 +2.63
Roebuck and Osterberg, 1938 t Joule-Thomsen coefficient	66.8% 250
P 1 20 60 100 Atm.	0 +4.36 +2.78 +2.03 -50 +7.73 +5.00 +4.00 -87.5 +10.87 +6.91 +5.62
24.5%	83.4%
250	250 -1.94 -2.17 -2.25 200 -0.63 -1.18 -1.33 150 +0.84 +0.18 -0.19 100 +2.82 +1.87 +1.34 50 +5.38 +3.96 +3.21 0 +8.59 +6.40 +5.43 -50 +12.59 +9.56 +8.11 -87.5 +15.95 +12.19 +10.35
49.0% 250 -4.82 4.77 -4.89 -4.89	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
-87.5 +13.01 +11.51 +9.08 +6.70	

Neon (Ne) + Argon (A)	Atkins, Bastick and Ibbs, 1939
	vol% k _t (15_100°)
Trautz and Kipphan, 1929	80 0.0233
% n	70 .0339 .0407
20° 100° 200°	50 .0457 40 .0467
70.38 24.22 29.08 34.46 46.18 26.35 31.35 36.90 27.70 28.11 33.21 38.86	k _t = Thermal diffusion coefficient
	Neon (Ne) + Krypton (Kr)
Trautz and Binkele, 1930	
t 100% 74.20% 60.91% 26.80% 0%	Atkins, Bastick and Ibbs, 1939
	vo1% k _t (15~100°)
20 22.13 24.01 25.04 28.08 30.92 100 26.93 28.85 29.90 33.13 36.23 200 32.22 34.13 35.29 38.90 42.20 250 34.60 36.58 37.93 41.50 45.01	80 0.0325 70 .0445 60 .0556 50 .0667 40 .0735
	k _t = Thermal diffusion coefficient
Rietveld and Van Itterbeek, 1956	
% n % п	
17.9° 100 22.10 32.27 27.93	Neon (Ne) + Xenon (Xe)
83,23 23,39 16,93 29,61 67,57 24,69 0 31,35 49,70 26,36	Atkins, Bastick and Ibbs, 1939
-44.2° 100 17.95 43.08 22.58	vo1% k _t (15-100°)
83.20 19.24 33.48 23.39 65.07 20.63 16.54 25.00 50.17 21.82 0 26.70	80 0.024 70 .0418 60 .0536 50 .0633
100 15.29 32.92 20.27 82.98 16.38 16.98 21.79 66.90 17.32 0 23.52 50.24 18.75	40 .0716 k _t = Thermal diffusion coefficient
-182.9° 100 7.75 32.65 11.16 83.90 8.51 16.34 12.37 67.13 9.22 0 13.52 48.28 10.18	Argon (A) + Xenon (Xe)
_200.9°	Atkins, Bastick and Ibbs, 1939
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	vol% k _t (15~100°)
0,11 0.04	70 0.0134 60 .0170 50 .0189 40 .0196 30 .0179
	k _t = Thermal diffusion coefficient

Argon (A) + Krypton (Kr)		Argon	(A) + (Oxygen (0 ₂)		
Veith and Schröder, 1937 (fig.)		Clark	, Dinn an	d Robb,	1954		
mol% f.t. m.t. m	ol% f.t.	m.t.	mo1%	- 183°	-178°	р - 173°	-168° -	163°
20 -187 -189.5	60 -174 80 -160.5 00 -157	-182.5 -168	0 10 20	1000.2 990.8 975.7	1600 1586 1565	2431 2412 2384	3521 3482	4994 4964 4914
Heastie, 1955 (fig.)	mol% f.t.	m.t.	30 40 50 60 70 80	956.8 934.6 909.4 881.7 851.5 818.9 783.8	1537 1505 1467 1426 1381 1333	2345 2300 2250 2192 2131 2063	3372 3303 2226 3141 3050	4849 4770 4682 4581 4472 4352
0 -189 -	80 -163	_168.5	90 100	783.8 745.0	1281 1223	1990 1907	2950 2838	4221 4073
20 _187 _188	90 -160 100 -157.5	~161.5	mo1%(L) -183°	- 178°	no1%(V) -173°	-168° -	163°
Halsey and Freeman, 1956 Crit.t. = _211°			0 10 20 30 40 50 60 70 80 90	0 8.88 17.54 26.09 34.71 43.59 52.91 62.87 73.77 85.98	17.77 26.48 35.25 44.26 53.65 63.64 74.47	75.09	9.18 18.20 27.15 36.18 45.39 54.92 64.95 75.64	0 9.27 18.39 27.44 36.58 45.87 55.47 65.50 76.13 87.55
Eucken and Veith, 1936	·		100		100		100	100
t U	t 100%	59.5%	Burbo	and Ishki	n, 193€			
ll 258 2.72 2.37 2	228 5.82 223 6.00 218 6.15 213 6.30	5.63 5.86 6.04	p	mol %		p	mo L	1 % V
253 3.71 3.34 2 248 4.44 4.13 2 243 4.96 4.63 1	113 6.30 108 6.45 103 6.61 198 6.78 193 6.97	6.27 6.42 6.64 6.88 7.10	556 586 616 646 666	74.9 63.5	92.3 78.7 66.3 54.1 45.8	686° 706 716 730	33.0 26.4	37.1 27.5 22.1 12.5
Atkins, Bastick and Ibbs, 19 % k _t (15.			760 800 840 880 910	86.80 77.00	93.9 81.0 68.4 56.5 47.2	183° 940 960 980 990	35.00 24.10	29.7 20.5
60 0.0114 50 .0137 40 .0154 30 .0143 20 .0116	Fining.		1250 1310 1370 1430 1470	85.85 75.30 63.20	93.3 80.2 67.6 55.0 46.5	1510 1550 1570 1580	33.10 24.80	28.3 21.6
k _t = Thermal diffusion coeff	icient							

Masson and Dolley, 1923	Federova, 1939
P Dv* P Dv*	% f.t. m.t. % f.t. m.t.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 -189.1 -189.1 77 -211.9 -215.6 31 -196.2 -202.2 79 -214.4 -218.2 42.5 -199.0 -204.9 80 -218.2 -218.2 50 -201.2 -207.2 90 -218.0 -218.3 60 -203.6 -211.2 96 -218.0 -218.6 75 -209.2 -214.2 100 -219.1 -219.1
	Fastovskii and Krestinskii, 1942
Fastovskii and Petrovski, 1955	mol% f.t. mol% f.t.
mol% L V p t	0 -189.6 26.9 -195.96 7.3 -191.07 33.2 -197.17 19.8 -194.07 44.2 -200.86
17.0 13.4 912 -183.9 16.8 13.2 1143 -181.6 16.9 14.3 1293 -180.3 16.9 14.5 1524 -178.5 39.9 33.7 917 -183.5 40.1 34.0 1143 -181.2	Din, Goldman and Monroe, 1955
40.1 34.0 1290 (?) -179.9 39.9 34.1 1524 -178.0 50.3 42.3 912 -183.3 50.4 42.7 1135 -181.0 50.2 47.0 1296 -179.6 50.4 47.0 1529 -177.7	Solid solutions, with a gap between 79 and 85% A break in the liquidus curve at 87.5% and -218.1°
60.9 53.5 908 -183.0 61.0 53.4 1144 -180.6 61.1 54.0 1288 -179.3 61.1 54.2 1526 -177.4	Prikhotka, 1939
72.3 63.2 908 -182.6 72.2 63.2 1146 -180.2	Absorption spectra in the crystal lattice
72.0 64.2 1291 -178.9 72.0 64.6 1529 -177.0	triplets w.1. (layer thickness = 20 mm)
78.9 70.6 909 -183.2 78.9 71.5 1134 -180.0 78.8 71.9 1291 -178.6 78.7 71.9 1515 -176.8	I 2803.0 2802.8 2791.3 2788.5 2778.2
	II 2745.4 2733.6 2721.2
Veith and Schröder, 1937 (fig.) mol% f.t. m.t. mol% f.t. m.t.	III 2695.0 2683.2 2669.5
0 -189.5 - 87.90 -215.61 -217.3 20 193 -186 90.27 217.04 217.1 40 198 201.5 94.64 217.45 217.5	8 2623.7
40 198 201.5 94.64 217.45 217.5 60 204 208 96.70 217.55 -217.7 79.95 211.56 217.33 100 -218.92 - 84.94 -214.07 -217.43	

		=				1					
Argon	(A) + N	itrogen (N ₂)				v/v _n	p	v/v _n	р	
Inglis	1006										
mol		p	mo	10		1	0,4424	-189 514,2	0.62° 0.2107	1052.0	
L	v	Р	L	V V	p		0.35415 0.2853	638.7	0.2107 0.1854 0.1854	1052.0 1079.8 1079.0	
	-188.50			-194.0	90	1	0.2423 0.2117	786.8 921.3 1045.5	0.1773	1088.9 1099.1	
0.0 5.3 7.3	0.0 25.5 34.3	$\substack{100.0\\130.6}$	0.0 3.4	0.0 16.7 39.2	200.0 233.2			1045.5 -194 309.1 481.4	1.54° 0.35405	595.3	
7.3 11.4	34.3 44.5	130.6 140.7 162.9 190.2	$\substack{10.7\\19.7}$		297.8 371.8	1	0.6956 0.4421		0.28495 0.28495	630.4 631.6	
16.6 21.0	$\begin{array}{c} 55.5 \\ 61.4 \end{array}$	$\frac{190.2}{211.2}$	3.4 10.7 19.7 27.8 40.5 51.0	65.4 7 5.8	435.7 529.7		0.3550 0.35405	597 594.5	0.2419	650.9	
11.4 16.6 21.0 25.6 30.5	44.5 55.5 61.4 66.5 71.2 73.6	232.2 254.5	$\begin{array}{c} 51.0 \\ 60.4 \end{array}$	82.1 86.4	599.0 660.4		0.8861	228.4	0.38° 0.44135	350.95	
33.4 37.5 41.8	73.6 76.8 80.0	211.2 232.2 254.5 267.1 284.8 304.2	60.4 72.8 82.8 90.8 99.7	55.5 65.4 75.8 82.1 86.4 91.5 94.8 97.6 99.7	746.0 815.5 872.5		0.6954 0.5657	290.2 326.1	0.3530	363.2	
41.8	80.0 81.5 83.0	304.2 315.6 330.1	90.8 99. 7	97.6 99.7	872.5 931.0		1.3964	-196 150.6	6.94° 0.6303	330.2	
52.2	84.6 86.4	346.4 361.1					0.9439 0.71225 0.6310	221.7 293.0	0.56285 0.4690	330.2 340.5 357.5	
44.5 48.4 52.2 56.4 57.3 63.1	86.4 87.2	366.0 388.7					0.6310	330.0	0.40385	369.8	
63.6 74.8 79.2 84.0 86.9 93.9 99.4	87.2 89.2 91.0 93.0 94.2	408.5 432.5 453.3						52.8	vol %		
84.0 88.9	95.9 9 7. 0	46 7. 5 489 .7				1	1.3663	-182 169.7	7.23° 0,2144	1053.9	
93.9 99.4	98.4 99.9	509.8 530.0					0.6310 0.2316 0.2171	373.0 989.0	0.2078 0.2004	1061.6 1065.3	
100.0	100.0	531.0					0.2171	1053.0	3 370	100013	
					2000		1.3979 0.94595	1053.0 -192 159.8 235.5 311.5	0.37425 0.3650	584.1	
							0.7125 0.4697	311.5 468.4	0.3465	599.0 606.6	
Holst	and Hambu	rger, 1916	S				0.4047	541.8	0.3069 0.28075	624.0 636.0	
t	p	t 0%	р			24.3 vol %					
-192.28	1138.0	-201.06	396,6					-183	3.05°		
-194.66	8 7 8.1	-203.87 9 vol%	264.6				4.079 2.073	57.7 114.0 215.3	0.3108 0.3040	737.6 754.0	
-192.10 -197.73	1151.6 863.5	-201.87	350.9				1.0943 0.4327	215.3 534.3	0.3048 0.2956 0.2867	752.5 756.2	
-177.70		2.6 vo1%					0.4327 0.3437 0.3174	534.3 669.3 728.8	0.2867 0.2743	758.6 762.5	
-190.53 -194.63	1218:1 781.5	- 199. 14	451.0				4.0803	-187 61.1	7.8° 0.1942 0.1928	1228.5	
	6	5.3 vo1%					0.5666 0.3170	434.7 766.0 819.6	0.1882	1228.5 1228.4 1232.7	
-189.67 -194.63	11 75.9 686.5	-198.63	424.2				0.2959 0.2011	819.6 1186.7	0.1795	1236.7	
İ		1.5 vo1%					4.078	-192 54.6	2.63° 0.512	427.0	
-186.61 -189.69	1162.3 852.2	-194 .7 0	487.8				2.072 1.0942	107.6 202.9	0.4923 0.4444	429.5 438.7	
100.05		0.0 vol%					0.8446 0.59615	261.5 368.0	0.4324 0.4212	439.3 439.45	
-183,30 -185,47	1198.6 9 72.0	-189.69	631.2	2			v _n = normal				
102 01	1001.	0%	9.32 5	522,6							
_183.21 _185.38 _185.40	801.	.7 - 18	9.38 5	518.7 514.1		1					
-189.14			9.54	509.2						!	

Fedorova, 1939

t	r)	vol.		
		condensa	tion		
	74.	05 vo1%			
-189.	62 19	52	0.2107 0.355		
- 194. - 199.		5 97 3 1 6	0.538		
	52.	8 vo1%			
-187.		053	0.2171 .365		
- 192. - 196.		599 330	.631		
	24.	3 vo1%			
183.		228 754	0,1942 ,304		
-18 7. -192.		134 127	.512		
					_
%		t cond		***	
	500mm	760mm	1000mm	1500mm	
		beginn			
24.3 52.8	-191.37 -193.75	-187.70 -190.19		-181.01 -183.83	
74.1	-195.94	- 192.50	-190.08	-186.23	
		end			
0.0	-139.71	_185.90	-183,23	-178.98	
10.0	-191.74	-187.91 -190.76	-185.18 -188.11	- 180,84 - 183,87	
$\begin{array}{c} 31.5 \\ 65.3 \end{array}$	-194.51 -197.30	_ 193,75	-191,21	- 187.19	
82.6 99.0	- 198.34 - 199. 22	- 194.86 - 195.81	-192,40	-188.46 -139.52	
00.0	199.29	- 195.88		-189.59	
	_				
%	р	90	p		
begir	n. conde	ns. er	d condens.		
		-188.05°			
24. 3	731	.8 .0		2.8	
52.8 74.1	967 1242	.0 3.	L.5 100	7.5 0.5	
		65	3.3 13 7	9.0	
			2.6 156 2.0 174	2.0 3.0	

%	f.t.	m.t.	
0	-189.1	-189.1	
5	-190.4	-195.0	
10	-191.4	-190.0	
12	-192.9	-192.2	
30	-198.2	-207.2	
42	-194.4	-209.5	
38.5	-205.2	-209.2	
50	-205.2	-210.0	
60	-208.2	-210.0	
70	-210.1	-210.3	
75	-210.3	-210.3	
90	-210.1	-210.4	
100	-210.1	-210.1	

Din, Goldman and Monroe, 1955

Solid solutions, with a minimum f.t. at 82 %

Weber, 19	218
vol%	heat conductivity coefficient . 107
00	0°
0 20.38 35.87 61.08 78.04 100	384.9 417.3 443.6 489.6 523.5 566.0

Holst and Koopmans, 1917

Electrostatic discharge tension for different temperatures (see authors.)

					751VII
Xenon	(Xe) + Kry	ypton (K	r)	-	
Freema	n and Halsey	, 1956 (fig.)		
mo1%		p			
	_183° _177°	- 1710	_165°	- 159°	- 153°
10	12 24.5	45	90	150	220
20	15 33.5	67	120	200	365
30	16.5 40.5	81	150	270	405
40 50	18 42.5 18 42.5	5 90 5 90	165 1 7 5	300 300	450 500
60	18 42.5	90 90	175	330 365	500
70	18 42.5 18 42.5 20 50.0	100	180	365	550
100	20 50.0	120	245	450	900
Halsey	and Freeman	, 1956			
	_	• • • •			
Critica	1 temp. = -	183°			
Xenon	(Xe) + 0x	ygen (0 ₂	·)		
von St	ackelberg,	1934			
b.t.	mo1%	p	p ₁		Pа
-185.7	79.8	513	1		513
- 137.8	82.2	410	_		410
-191.4 -193.2	86.5	266	-		2 66
- 193, 2	88.5	212	~		212
Xenon	(Xe) + Ni	trogen (N ₂)		
Ewald.	, 1955				
P	mol%	P	mol	%	
	-118				
4.74 4.81	89.2 89.3	36.6	95. 96. 96. 96. 95. 95.	98 24	
4.90	88.6	46.1	96.	$\mathbf{\hat{2}}\overline{3}$	
4.20	88.6 88.6		96.	29	
4.81 4.90 4.90 6.92 6.92	89.6 01.70	48.9	96.	07 00	
6.92	89.6 91.70 91.78 92.86*	56.6	95.	38	
6.92 9.50	92.86*		95.	18	
16,20	93.18 95.27	70.4	95. 95.	62 41	
10,20	95.61	91.3	96.		

91.3

111.6

* duplicate analyses on one gas sample.

95.61 95.68 96.70?

26,60

96.42 95.96 96.72 96.95

Krypton (Kr) + Oxygen (0_2) von Stackelberg, 1934 b.t. mo1% p Pε p_1 70.8 71.5 79.0 79.6 $3.4 \\ 3.0 \\ 1.4 \\ 1.1$ 159 -194.0 162 -194.7 -198.7 -200.0 148 145 87 72 86 70.9 Fastovskii and Petrovskii, 1956 mol% b.t. V L 43.2 71.0 92.4 96.2 98.0 6.0 15.4 46.8 70.5 -156.7 -163.2 -172.6 -175.9 1091 1069 1014 1091 $110\overline{8}$ 84.0 -178.0 2219 2219 2217 2200 2224 6.4 7.0 46.0 70.7 84.2 -155.1 -155.7 -162.9 40.0 43.6 90.0 95.8 97.2 -168.2 -169.7 2954 7.3 -140.8 3689 6.7 37.9 -136.2 17.8 47.7 70.2 84.5 68.0 90.4 95.5 97.6 -160.2 -144.0 -155.0 -160.4 -162.2 3621 3687 3692 3694 -136.6 -149.8 -155.2 -157.0 5164 5122 5162 5164 18.1 47.8 70.4 84.6 66.0 88.0 95.0 97.8

Chlorine (Cl) + Bromine (Br)	Chlorine (C1) + Iodine (I)
Lebeau, 1906 # f.t. # f.t. 0 -102.5 72.07 -57 16.66 -99 78.54 -52 19.29 -94 80.00 -49 27.87 -91 82.09 -45 30.76 -89 85.01 -42 39.52 -85 88.16 -37 48.64 -82 90.00 -31 48.90 -80 91.60 -28 57.21 -75 92.00 -27 59.73 -70 93.07 -25	Stortenbeker, 1892 atom % f.t. atom % f.t. 59.1 10 48.68-48.66 26 56.7 15 47.4 25 54.3 20 47.6 24.8 52.0 24 46.3 23.5 51.0-50.7 26 45.7 22.7 50.0 27.2
69.29 -58 94.07 -22 100 -7.3	Stortenbeker, 1889
	$L + V + C_1 + C_2$
Karsten, 1907	mol% (I_2) t p solid phase L V
atomes % b.t. atomes % b.t. L V L V	60.2 52.1 7.9 11 I ₂ + ClIa 45.7 36.4 22.7 42 ClIa + Cl ₃ I 102 above 760 Cl ₃ I + Cl ₂
100 100 58.7 80.5 24.8 27.2 97.6 84.2 52.3 60.75 10.6 12.5 95.9 76.1 51.2 60.6 9.9 7.1 93.0 57.8 42.5 47.9 7.1 -5.3 88.3 47.8 38.1 46.26.9 -46.0 37.0 36.9 5.5 -13.7 84.7 32.1 33.1 0 0 -33.6	L + V + I ₂ mol% (L) t p mol% (L) t p 59.2 5 - 69.0 40 43 60.2 7.9 11 71.4 50 63 60.6 10 - 78.1 70 - 61.0 20 15 90.9 100 -
atomes % f.t. m.t. atomes % f.t. m.t.	67.1 30 25 100.0 114.3 91 67.1 30 25
100	L + V + C1 I _X mo1% t p L V 60.2 52.1 7.9 11 59.2 - 10 12
f.t. atomes % C L	- 13.5 13.5 56.8 51.8 15 16 54.3 - 20 22
-18 92.7 85.4 -34.2 80.6 70.2 -33.3 82.5 70.6	50.0 49.0 27.2 f.t. 39 - 26 41 47.4 40.8 25 41.5 45.7 36.4 22.7 42
	$L + V + C1I\beta$ $V + I_2 + C1I\alpha$ $V + C1I_\alpha + C1_3I$
	mol% L t t p t p
	58.1 0.9 5 9 9.7 16 54.3 7.0 7.9 11 15.0 24 50.0 13.9 f.t. 19.0 32 47.6 12.0 20.0 36 22.7 42

L + V	+ C1 ₃	, I					Kars	ten, 1907					
t	р		mo1%		t	% (L)	%	b.t.	%	,	b.t.		
				<u>v</u>			100	184	52.2		103.5		
20 22.7	43	46	5.1 5.7 36	5.4	101 94	54.36 23.6 7.3 3.5	90.7 83.1	6 132.	4 51.3 5 51.3	35 56	100.9		
22.7 25 30	49 72 147	0.5 2 44	1.21 29 2.2 19	0.8	75 60,5	3.5 1.6	76.9 76.4 69.0	5 120. 3 120. 6 114.	5 51.3 5 50.3 8 50.0 7 48.7)	98.0 97.4		}
40 50 60	296 57	· -	_		42.5 30 102	0.4	69.7 67.0	7 114. 6 113.	2 48.7	76 30	39.2 84.7 81		
64.1 70.1	773 1183	3 -		-		v	60.8 54.2	5 111. 6 107.	8 45.7	70	75.5 74		
73.6 78.7	2294	. 37	7.6 10),3 -			52.4 52.3	0 104. 9 103.	3 38.8	30	(3.5		
85.3 89	3549	33	3.1	-			_%				%		
90.4 95.4	5190 8137	/ -		-			L 70	v	b.t.	L	γο V	b.	τ,
96 100.5	11707	7	, 2	-			92.0	61.76	153	50,83	50.	0 98	.5
101	10	aud. 20	,	-			90.9 66.6	58.96 53.0	148,5 114	49.98 49.30	43. 24.	3 95	.5 .5
I + C	l ₂ + V	,					56.96	52.7	107				
mol%			p										
	10°	20°	25°	27.50	30°	40°	ļ						Į.
52.6 50.3	14	22.5 24	31	3 6. 5	40	-	Chlor	rine (C1) + Sulf	ur (S)		
49.8 46.5	13	25	- 43.5	50.5 51	42.5 45	72	See .	also the s	vetame .	C1 +	5 (1	and	
	<u>-</u>							riso the s	systems .	Cl ₂ +		and	
mo1%	50°	60°	p 70 ∘	80,3°	90.4°	96,6°							
52.6				00.0	70.4	90.0	Aten	, 1905					
52.6 50.3 49.8	119	191	299	- 454	660	808	atom	% -10°	0°	р 20°	40°	60°	7 5°
49.8 46.5	-	-	-	-	-	-							
mo1%	 T.		mol% V				0.0 25.5	1400 480 350	2780 950 510	5030 1730 970	7740 1680	14140 -	23900 -
	-	30°	64°	80°			29.9 32.5 34.6	120 90	260 190	550 4 00	1100	1950	-
59.24		52,00					39.8 49.7	40	90	200 40	390 60	740 100	1440 210
56.65 51.09 50.00		51.78 50.74	_	-							•		
50.00 45.43 45.36		48.94	31.25	47.87					%				
45.36 42.25 38.61		35,21 29,76	11.38	-			<u>L</u>	<u>v</u>	L		v		
		-	11,00				20.7	4.7	00		30 4		
							28.7 34.9 39.9	4.7 21.6 29.8	41.6 43.0 45.2)	30.4 32.3 33.3		
							09.9	27.0	40,4	•	00.0		
					··-		<u></u>						

atom L	% V	b.t.	atom % L V	b.t.	Aton	, 1905				į
} -		740 m			Atom	<u> </u>		t.		
11.4 17.1 26.9 29.2 30.5 32.0 35.6 36.0	0.8 5.3 18.0 25.6	-25.0 -16.4 -0.6 +12.0 18.8 32.0 50.2 51.4	49.7 47.6 50.3 48.0 52.0 49.6 54.0 50.1 56.2 49.2 60.2 50.0 61.6 49.7	134.6 135.4 138.4 141.8 142.8 146.2 146.8	20.0 33.7 45.3 47.4 48.6		_ 5 _ 6 _ 9 _ 8	0 5 0		
36.0 39.2	31.6	51.4 64.8 78.6	66.4 49.4 76.5 49.7	150.4 152.8	atom	% f	.t.	atom %	f.t.	
39.2 42.7 43.9 48.0 49.2 49.2 32.2 39.1 43.6	40.0 46.7 47.7 47.6	78.6 83.8 105.0 132.0 132.9	90.5 49.9 93.7 - 96.1 55.5 98.9 -	150.4 152.8 212 264 320 415	53.1 55.7 59.0 64.6 72.2 78.7 85.6	-1 +1 3 5 6	6 rhombic 0 7.9 6.8 5.2 5.6 7.7	90.2 94.7 96.9 98.7 100.0	83.5 95.6 86.0 mc 103.2 110.4 118.8	onocl.
43.6 47.5 48.2	$\frac{0.9}{2.2}$	+5 +35			atom	% f.	t. E	atom %	f.t.	E
	-	+50			4.6 9.7 16.0 19.7	_] _]	03 - 08 - 14 - 14 -119	24.4 40.1 44.8	-109 -93 -82	- 120 - 120 - 120
		cher, 1903								
L	% V	L	% V							
		-10°			Becl	cmann, 19	09			
29.9 30.4 30.9 31.5	14.8 14.9 14.3 14.7	36.7 38.5 39.65 40.1 40.7	21.4 25.6 27.9		%		t. cooling	m.t cooling		
32.3 33.3 34.9	15.0 16.7 18.9	40.7 41.5 52.1	30.2 31.8		47.5 45.2 43.8 42.6	-75 66 64 62	-75 84 87 95	~75 82 87 92 95	- 7 5 85 89 96	
28.13 29.6 30.7 31.4 32.2 32.9 33.9	5.3 9.1 14.9 18.3 20.7 25.0 29.7	34.9 35.1 35.6 36.8	31.9 32.4 33.1 34.3		40.8 39.9 38.3 36.3 33.7 31.1 31.1 30.6	60 60 61 61 60 54 55 45	105 136 135 118 115 78 78 72 66 50	95 101 115 96 89 80 80 78 72	107 136 135 123 117 83 90 89 77	
%	f.t.	%	f.t.		26.1 23.6 19.3 18.5	26 21	41 36	60 60	64 61	!
48.5 47.5 46.7 46.2 45.5 40.0 34.2 33.3 33.0 31.7 31.6 30.6	-81.5 -80.0 -81.5 -83.0 -85.0 -113 -70 -69 -64 -63 -62 -60	26.7 21.1 21.0	-56 -46.5 -35 -32 -32 -34 -31.5 -32 -34 -38.5 -39		18.5 18.4 16.5 13.0	18.5 18	32	58 60 62 -64	61 61 62 -66,5	

				-n			
			oride (S ₂ Cl ₂)	79.68 78.00 75.14 74.21 73.14 70.71	-18.5 -14.0 -9.5 -8.0 -4.5 -0.7	at 148° 48.3 35.0 35.0 32.5 26.55	36.5 45.0(mono.) 53.0(rhom.) 57.0
Aronstein an	na Meinuiz	en, 1899		73.14	-4.5 -0.7	26.55	54.8 68.5
≸ S ₂ C1 ₂	D.b.t.	% S ₂ Cl ₂	D.b.t.	68.90		24.60	70.4 73.2
95,736 94,581 93,373 91,690 90,079	4.057 4.644 5.184 5.832 6.417	88.480 87.030 83.720 82.130	6.945 7.417 8.372 8.860	68.90 67.71 77.85 62.60 62.04 57.30 49.71 48.60	2.3 5.5 17.0 17.5 22.8 27.8 34.0 36.2	24.60 21.84 17.55 14.10 14.10 12.03 11.58 10.65 2.98	88.5 70.4 73.2 80.5 80.8(mono.) 85.4(rhom.) 88.4 79.6(mono.) 90.6
				-	after heating	at 178°	
Ruff and G	olla, 192	4		66.85 65.36 62.04	2.75 5.0 10.75	42.61 38.69 35.24	38.0 41.0 42.75
% S ₂ C1 ₂	D b.t.	% SaCla	D b.t.	62.04 59.04 56.04	12.0 18.5 23.5	35.24 31.45 26.55 21.84	42.75 51.5 62.8
99.0907 98.1359 97.195	0.85 1.65 2.40	89.23 88.50 81.97	5.80 6.00 8.20	56.04 53.03 50.22 48.54 47.20	23.5 25.4 28.0 32.2	21.84 14.81 6.89	62.8 70.0 83.8 102.5
97.195 96.239 95.296 92.520	2.40 2.90 3.40	81.97 69.45 64.10	13.00 15.60		after heating	at 230 - 235	o
92.520	4.97	04.10	13,00	44.7 38.69 31.45 29.57	36.6 44.5 53.5 43.0(mone	20.57	58.6(rhom.) 54.5(mono.) 63.5(rhom.) 73.4
Hammick and	d Zveginta	zov, 1928					
% (S ₂ Cl ₂)	f.t.	% (S ₂ C1 ₂)	f.t.	Aten, 1905			
92.66 89.37 88.19	-9 +2 4	39.27 37.82 32.50	+70.2 71.5 77.4	mo1 % (S ₂ C1 ₂)	Dv (in cc)	mol % (S ₂ Cl ₂)	Dv (in cc)
88, 19 86, 48 82, 72 77, 50 74, 21 71, 88 69, 32 65, 09 62, 60 57, 36 55, 30	10 21 28.7 35.7 36.8	26,55 24,60	82.4 83.6 86.8 90.5	11.2 28.7 35.6	0.25 0.35 0.60	0.0° 44.7 54.6 76.6	0.67 0.59 0.30
71.88 69.32 65.09 62.60	$\frac{41.0}{45.6}$	17.55 16.60 14.10 12.03 11.58	92.6 92.5 97.9 96.7	B. 1000			
57.36	47.6 54.2 56.0	10.65	100.8	Pekar, 1902			
55.19 50.31 48.30	56.2 60.2 +61.ε	10.65 9.47 6.82 2.98	101.6 101.4 +110.3	63.14 %		t 100 % s	5 ₂ C1 ₂
1		ing at 100°		17.7	36. 48.124	86° 15.5	42,364
88.19 85.76 84.25 82.72	-30 -22 -15.5	48.30 39.27 37.82	+46.4 56.8 59.4	17.7 61.3 100.2	42.731 37.613	60.9 99.8	36.453 31.150
79.68 78.09	-11 -6 -3.3	35,00 32,50 29,55 26,55	56.8 59.4 62.2 65.3 70.6	Lowry and J	essup, 1930		
75.15 73.14 70.71 69.32	+2.8 8.4 14.5 19	26.55 24.60 21.84 17.55 14.10	71.5 74.8 79.2 85.6		mol % in Cl+S ₂ Cl ₂	σ	
65.09 62.60 59.96 55.30	24 28.2 32	11.58	85.6 90.8 94.4 94.9	22012	42.32	0° 38,63	· · · · · · · · · · · · · · · · · · ·
48.80	39.4 +46.5	10.65	+97.4		28.86 16.99	30.29 25.43	'

Chloring (Cl.	· · Culfur die	hloride (SCl ₂)	atom %		σ	
Chitorine (Ci2) + Sullul alc.	intorfue (SCI2)	atom %	t	0°	
)	t°		
Lowry and Jessu	ıp, 1930					
atom %	t	d	- 50.00 47.93	16.3 43.43 20.2 41.60		
			- 45.66	15.0 40.48	42,70	
mol %	($SC1_2$) in at	om Cl + SCl ₂	41.80	17.1 38.10	40.61	
63.10	28,25	1.72191	41.63 40.27	18.2 38.18 14.6 37.70	39.79	
11	33.40	.72191	39.91	14.6 37.70 15.2 37.56 15.7 36.84	39 .7 5	
57.97	13.30 - 1.05	.72191 .742 94	38.13 35.72	15.7 36.84	37.63	
_	18.30	72191	ll 33, 18	15.0 34.39 14.5 32.24	_	
54 22	3.80	.74294	32.96 30.77	14.5 32.24	36.58	
56.32	18.50 8.72	.70780 .72191	26.69	20.1 31.87	33 03	
	21.50	.70780	25.84 23.53	16.0 29.47	32.53	
54.70 54.40	12.90 15.70	.70780	23.53	10.0 24.01	30, 84	
54.40	30.26	.70780 .68592	18.80 18.63	19.0 24.91	28.20	
51.50	5.18	. 70780	16,29	13.0 24.81	26.81	
50.00 50.0 0	15.98 1.80	.68592 .70780	9.95	15.9 21.79		
_	15.83	.68592	6.17 0.00	16.4 20.44 12.9 18.87		
47.93	11.60	.68592	0.00		21,21	
45,66	6.92 21.78 - 0.38	.68592 .66152	0.00		21.24	
41.80	- 0.38	.68592				
1 -	13.83	.66152				
41.63	17.40 24.85	.65578 .64 2 60	il .			
40.27	24.85 - 2.90	.68592	Culeus di	oblomid- (CC)	C-16	
39.91	10,90	.66152	Sulfur die	chloride (SCl ₂) + Sulfur	(S_2Cl_2)
_	-3.60 10.20	.68592 .66152	1			(52012)
38.13	17,60	.64260	Whiting,	1952		
37,62	26.68 16.45	.62638	# (S C1)	- 	A (C C) .	
37.25	7.85	.64260 .65578	$\frac{\% (S_2Cl_2)}{}$	<u>d</u>	% (S ₂ Cl ₂)	ď
35.72	7.85 15.10	.64260	· I	15.	56°	
35.72	4.85	.65578 .64260	0.0	1.6291	52.2	1.6594
33.87	11.92 17.93 7.52 16.20	.62638	6.6	.63345	54.0	.6609
33,57	7.52	.64260	11.4 16.7	.6362 .6396	56.5 65.9	.66 2 5 .66 7 1
33.18	7.45	.62638 .64260	1 23.6	.6434	7 3.4	.6719
-	16.05	.6 2 638	31.9 36.5	.6496 .6520	75.6 84.4	.6730
32.96	23.00 ~ 0.40	.61283 .655 7 8	37.2	.6509	98.0	.67795 .6804
-	15.13	.63638	49.55	. 65 85	100.0	68603
30.77	22.11	.61283				
-	$\frac{16.16}{21.98}$.61283 .60128				
28.86	4.83	.6 2 638				
26.69	$\substack{11.68\\0.58}$.61283 .62638	N .			
_	7,307,30	.61283	ı			
25.84	9.25 18.33	.60128	Į.			
23.53	- 1.45	.58230 .61283				
_	4.22	.60128	1			
18.80	17.62	.54364	ļ			
18:63	$\substack{ 28.10 \\ 0.20 }$.52351 .58230				
16.29	18.45	.54264				
	18.39 28.60	.52361 .49980	1			
9.95	2.15 12. 12.09	.52351				
-	12. 12.09	.52351 .49980				
6, 17	20.05 2.70	.47977 .49980	1			
	10.28 2.30	.47977	1			
0.0	$\frac{2.30}{11.80}$.45980 .43 2 96				
0.0	2.60	.45980	1			
0.0	2.62	.45980	1			

Chlorine (C1) + Tellurium (Te)	Bromine (Br) + Iodine (I)
Damiens, 1923	Kruyt and Helderman, 1918
% f.i. E % f.i. E	mol% f.t. p mol% f.t. p
95.24 409 - 73.54 - 233 92.91 375 238.5 72.50 - 227.5 91.02 352 " 70.88 - 230.5 87.78 308 " 71.05 234 200 86.03 285 235 69.49 230 200 85.38 281.5 238.5 68.55 225 201 82.64 270 " 66.63 220 203 82.00 265 236 64.82 215 203.5 80.79 - 234 64.26 214 203.5 79.75 257 238.5 61.43 206 204	C + L + V 0.0 -7.5 44 50.5 40.4 48.2 32.5 19 83 51.4 42 45.4 35.9 23 85.8 54.7 44.3 42.7 35.9 25 85 60.4 47.9 54.6 43.6 31 79.5 60.4 50 56.7 47.1 36 64.1 92.4 100 above 200 50.1 40.4 48.2 100.0 112 92
79.20 - 236.3 60.50 205 205 236.1 57.29 207 202.5 74.75 - 231 54.47 208 201 74.10 - 231.5 52.28 211 202 73.82 - 220	Meerum Terwogt, 1905
	$\left\{ egin{array}{llllllllllllllllllllllllllllllllllll$
Chlorine (Cl) + Carbon (C) see Cl_2 + CCl_4 (Carbon tetrachloride)	50.2° 92.8° 25 0 331 50 0 372.0 40 0 191.7 60 18.8 206.7 50 8.23 86.1 70 27.71 160.5 58 37.93 45.7 80 35.71 113.0 100 100 3.5 100 100 30.7
	mol% b.t. p
Chlorine (C1) + Silicium (Si) Kordes, 1926	
mol % (4+1) f.t. 0 -102 14 -116 E 100 -67	60 42.90 145.4 768.8 70 48.47 151.0 770.1 80 50.32 159.4 757.8 90 65.21 173.5 760.5 100 100.00 187.5 771.7
	mol% f.t. m.t. mol% f.t. m.t.
Biltz and Meinecke, 1923 mol% f.t. E mol% f.t. E	$ \begin{bmatrix} 0 & -7.3 & -7.3 & 50 & 41.0 & 40 \\ 2 & -6.9 & -7.2 & 52 & 42.8 & 42 \\ 5 & -6.1 & -6.7 & 53 & 43.5 & 42.5 \\ 10 & -2.8 & (-6.2 & 60 & 52.0 & 46.9 \\ 15 & (2.5) & (-5.0) & 70 & 69.0 \\ \end{bmatrix} $
100 -67.5 - 56.0 -84.0 -117 90.4 -70.0 -116 48.1 -87.5 ? 83.8 -72.0 " 33.6 -99.0 -117 74.2 -75.0 " 26.7 -105.5 -117	- 15 (2.5) (-5.0) 70 69.0
83.8 -72.0 " 33.6 -99.0 -117 74.2 -75.0 " 26.7 -105.5 -117 68.8 -77.0 " 19.8 -112.5 -116 65.8 -78.0 " 8.4 -110.5 -116	t mo1% t mo1% L C L C
	-1.2 12.24 22.17 38.0 49.32 50.62 +13.8 25.60 37.69 58.6 70.54 22.8 32.89 40.53 68.2 75.75

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BROMINE + SULFUR

						Bromine	(Br)+	Sulfur	(S)		
Denisov	a, 1956								•		
mo1%	m,t,	f.t.	mo1%	m,t.	f.t.	Ruff an	d Winterf	eld, 190	03		
0 5	- -7.4	-7.3 -5.2	50 55	40.8 43.2 43.6	41.0 46.2 48.8	8	p	%	р		
10 15 20 25 30 33 36 40 43 46	-6.4 -3.8 -1.2 +2.2 +2.2 8.5 12.8 15.1 22.8 27.2 32.8	-2.4 +3.2 9.4 15.0 22.4 27.2 31.2 36.2 38.6 39.7	55 58 60 63 67 72 80 90 93 98 100	43.6 46.6 48.6 54.4 62.8 72.6 90.4 100.2	48.8 52.6 57.4 64.2 72.6 89.8 98.6 108.6 111.2 114.0 (1+1)	28.62 27.28 26.35 25.47 24.43 22.18 22.09 19.85 16.86	20° 2.9 6.9 13.1 22.5 27.2 40.9 39.1 54.3 68.6 73.2	16.57 16.34 16.08 13.45 10.72 9.10 8.67 6.37	74.0 74.6 74.6 95.4 114.7 126.2 128.4 148.7 174.5		
W	Towns	1005				%	f.t.	<u> </u>	f.t.		
	Terwogt,					28.62 27.57	-46.0	13.56 12.94	-37.0 -32.5		
mol%	50°	42°	ם 10∘	0°		26.49	-47.0 -48.5	12.94 12.91 12.28	-35.5 -30.0		
30 40 50 58	3,4502 .5787 .7343 .8239	3.4779 .6060 .7616 4.4464	4.2501 4.4135	4.1348 4.2818 4.4157	3	25.38 24.29 23.26 22.28 21.29 20.38 19.49	-51.5 -53.0 -56.0 -57.5 -58.5 -59.5 -59.5	11.69 11.13 10.57 10.08 9.63 9.08	-30.0 -27.0 -25.0 -24.5 -23.5 -21.5 -21.0		
						18.62 17.08	-56.0 -52.0	8 67	-19.5		
Plotnik	ov and Rol	cotvan 1	013			16,31 15,60	-48.0 -46.5	7.85 7.54	_ 18 0		
# 10 th 1 kg		j	913 %			14.92 14.24	-42.0 -39.5	8. 19 7. 85 7. 54 7. 25 6. 97	- 16.5 - 15.5 - 15.5		
		25°		- <u> </u>	<u> </u>	13,65	_34.5			(1+1)	
$^{0}_{9.0}$	3.0 3.2	077 207	32.5 44.4		447 593	<u> </u>	đ	78	d		
8	Я		6	и		28,62	20° 2.6355	8.04	2,9650		
	4	0,6°				19.12	2,7896	0	3, 1200		
47.34 54.93	1.424 1.926	59	.48 2	. 350							==
12.70	0.0032	25° 31,	. 9 3 0,	3150							1
14.72 16.20 21.92	.0090	6 33, 33,	. 87	, 3 7 62 , 4343			a, 1956		- t- d C		
21.92 25.45 26.04	.0458	38,	. 19	4723 6402		atom %			atom % S	f.t.	
29.00 31.26	.1144 .1682 .2704	40.	00 46	6738 8570		0 5	- 7	. 3 . 6	49.00 50.00	-43.8 40.0(1+1) 42.2	
	. 2704		.50 1,	. 260		10.00 15.65	17	-4	52.00 54.00	46.0 E	
						18.50 22.00 25.00	25	.6 .2 .6	56.85 58.25 60.00	42.2 34.0 30.2	ļ
Heaven	s and Che	esman, 19	50			25.00 28.20 30.00	32	.8 .4	62,98 65,73	21.6 11.5	
	a*	b*	C*			31.00 34.16	38	. 8 . 8	68,21	5.5 +0.2	
100.0 93.7	4.77 .75	4 7.25				36.82 38.25	48 50	.2	70.00 74.20 78.56	$\frac{14.0}{27.0}$	
85.1 75.1	.73 .71	2.16	3 .61	.0		39.20 40.50	52	.2 .0 E	83.11 88.20	42.8 61.1	
66.0 62.1	.68	7.05	4 .39	0		42.00 44.45	52 49	.8	94.00 100.00	$\frac{86.2}{+118.0}$	
	ce spacir				(X)	47.00	-46	. 2			
											===

				BROMINE
	e (Br) s, 19 2 1 a	+ Tellurium	(Te ₂)	
%	f.t.	Е	min.	
100 95.40 90.41 84.21 78.63 76.16 73.80 71.76 70.59 68.51 64.00 54.57 51.95 44.46 40.27 36.11 34.80 32.52 31.18 31.00 28.78 28.51	453 423 396 350 288 255 241 229.5 212 202 205 232 242 262 271 272 288 316 321 337.5 341 343 361.5 363.5	224 224 224 225 224.5 225 223.5 200 201 202 202 201.5 199 200 200 200 200 200	25 28 34 34 23 111 8 23 540 24 25,5 13 11 4,5	
(1+2) (2+1)	(2+3) (3+1)	(3+4) (1+ (4+1)	1) (4+3)	(3+2)
	%	-	of vaporiza	

%	speed of vaporization			
	2 h. heating 1	h. heating		
90.41	0.0657	0.119		
78.63	0,1617	0.277		
73.80	0.2324	0.385		
55.73	0.3835	0.714		
44.46	0.4370 (1+2)	0.890		
43.80	0.5040	0.910		
31.00	0.0290	0.060		
28,51	0.0037 (1+4)	-		

Bromine (Br_2) + Arsenic tribromile ($As \ensuremath{\mathbb{B}} r_3$)

mo1%	f.t.	m.t.	mo1%	f.t.	m.t.
100 97 94 92.5 87 77.5 75.5 69.5	31 30 28.5 27.5 25 19.5 16.5 12.5 7.5	-38 -36.5 -36.5 -34.5 -35.5 -35 -35 -34.5	58 52.5 49 40.5 33.5 27.5 13 0	2 -4.5 -10 -20.5 -31.5 -27 -13.5 -7.3	-31 -31,5 -31,5 -31,5 -31,5E -35 -33,5

Bromine (Br_2) + Antimony tribromide ($SbSr_3$)

Pushin and Makucz, 1938

		•				
mo1%	f.t.	E	mol%	f.t.	Е	
100	94	_	45.5	45	- 17	_
96.5	92.3	-	33.5	29	-15.5	
92.5	89.5	-20	27.5	16.5	-15.5	
86	84	- 17	21.5	1	-15.5	
83.5	81	-16	20	-7. 5	-15.5	
73.5	72.5	-15.5	13	-13	-	
67.5	69	-18	6	_ 10	_	
56	5 7. 5	₋ 17	0	-7. 3	-	
E: 94	1.5 mol%	-15.5°				

Plotnikov, 1903 and 1904

%	и	%	н	Æ	н
		1:	8°		
7.1 13.2 15.5 17.2 18.0 18.9 19.3 20.4 21.5 21.7	0.0014 .0020 .0100 .0140 .0250 .0310 .0340 .0520 .0560	22.0 23.2 25.1 27.0 28.8 29.0 29.4 31.0 33.7	0.0880 .1000 .1100 .1900 .2500 .2400 .2500 .3100 .3800	34.5 35.4 36.7 37.8 38.4 38.5 40.2 41.7	0.4600 .5500 .5700 .5700 .5800 .6500 .7700 .9100

M	mol. cond.	M	mol. cond.	
	18	30		
3.98 3.21 3.14 2.81 2.44 2.39	0.0245 .0183 .0182 .0135 .0100	2.25 2.09 1.81 1.61 1.09	0.0983 .0054 .0032 .0021 .0020	

Iodine (I) + Sulfur (S)	Denisova, 1956
	atom % f.t. atom % f.t.
Smith and Carton, 1907	
% f.t. % f.t.	98.7 112.4 57.20 91.6
100.0 114.5 50.0 66.4 94.1 108.8 48,4 68.3	94,42 96.6 53.22 93.8
88.8 103.2 46.6 70.4 84.2 98.0 42.8 74.2	92.86 91.4 52.00 95.0 91.33 88.2 48.80 96.8 88.64 82.6 45.80 98.2
80 0 92 2 29 5 79 2	86.32 74.6 41.55 100.2 84.20 71.2 39.00 102.0
72.7 86.7 27.3 89.8 69.6 84.0 23.8 92.6	82.50 68.0 34.90 103.6 82.00 66.2 30.71 105.0
1 57.1 71 0 15 7 00 4	80.00 65.0 E 27.18 106.2 77.00 70.0 20.00 108.2
55.2 69.3 11.1 103.8 53.3 67.0 5.9 108.4	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
51.6 65.9 0.0 113.6	67.97 83.6 0.00 114.0 62.75 87.2
Ephraim, 1908	
% f.t. min.(E) % f.t. min.(Iodine (I) + Selenium (Se)
0 112.8 - 35.2 82.1 15.2 2.8 111.2 - 36.6 80.3 15.2 4.2 108.6 - 37.4 79.0 15.5	5 Pellini and Pedrina, 1908
$\ 6.1 107.5 - 41.1 74.0 15.6$	0 % f.t. E % f.t. E
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0 113 - 55 73 58
15.3 100.0 8.25 55.7 67.2 15.29	$\begin{bmatrix} 10 & 100 & 57.5 & 70 & 123.5 & 58 \\ 17.2 & 93 & 59 & 80 & 157.5 \end{bmatrix}$
19.5 96.2 9.75 65.4 77.0 12.50 21.4 94.2 11.75 70.3 80.4 10.20	0 20 89 58 90 190 57.5 30 80 57.5 98 213 58
19.5 96.2 9.75 65.4 77.0 12.56 21.4 94.2 11.75 70.3 80.4 10.22 23.2 92.5 12.5 75.2 86.0 8.0 25.1 91.6 13.0 78.8 89.7 6.0 27.1 89.2 13.25 87.3 97.9 2.5	40 70 58 100 218.5 -
27.1 89.2 13.25 87.3 97.9 2.5 30.8 - 14.0 100.0 115.7 -	
Olivari, 1908	Iodine (I) + Tellurium (Te)
% f.t. E % f.t.	E Jaeger and Menke, 1911 - 1912
$\begin{bmatrix} 0 & 113.9 & - & 42.61 & 100.4 & 1\\ 10.75 & 110.7 & - & 45.87 & 98.6 & 1 \end{bmatrix}$	3.3 % f.t. E min.
10.75 110.7 - 45.87 98.6 15.24 109.6 - 48.80 96.9 17.67 109.4 4 50.58 96.0	- 100 452 - 92.3 405 152 120
19.98 108.4 - 51.50 94.9 27.24 106.2 8.15 53.20 93.9	- 92.3 405 152 120 - 85.3 385 159 180 - 81.3 362 161 -
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
39.41 101.9 - 59.50 89.2	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
% d % d	22.5 259 130 120
24° 21.51 3.831 41.48 3.152	20.6 255 109 - 20.5 258 110 - 17.5 256 106 540
25.74 .674 44.68 3.065 29.36 .521 50.22 2.941	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
29.36 .521 50.22 2.941 32.30 .448 59.58 2.755 34.30 .374 71.50 2.491	0.0 113.4 -

	s, 1921 f.t.	tr.t.	min.	E	min.	lodine	(1 ₂) + Phos	phorus diio	dide (P ₂	Ι ₄)
77.50 70.29 65.56 61.93 57.74 54.34 54.12 51.37 54.38 48.36 48.36 47.46 47.46 47.46 46.73 45.47 44.77 43.98 44.77 43.98 44.96 41.21 40.62 39.80 31.87 37	-192 188 -187 186.5 186.5 184.5 184.5 180.8 179.8	183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5 183.5	13 23.4 30 37.8 - 48.3 50 52 - 55 55 56 47 - 42 43 30 22 - - - - - - - - - - - - - - - - - -	- - - - -		mol%	and Kuzmenk f.t. I II 113.3 - 111.5 - 104.2 - 101.1 - 99.0 - 93.0 - 93.0 - 93.0 - 93.0 - 64.5 - (I ₂) + Phose kov, Fialkov mol%	mo1% 27.1 31.5 34.3 36.8 39.8 44.5 46.3 50.3 58.5 65.0 67.4	140° 0.080 .308 .657	33.0 32.8 33.0 33.0 33.0 33.0 33.0 60.2 61.0
%	tr.t.	Е		min.		3.96 7.39 9.74 19.71	2.48 4.69 6.24 13.15	.47 .54 .23	.93 1.15 1.22 0.98	
		, (3+4)	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 7 7 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	- - 23 28 37.5 47.5 49.5 60 70 73 84 80 85 85		0 0.82 2.53 4.26 7.38 10.71 17.81 25.38 28.20 0 14.81 22.12 38.88 50.91	0 0.51 1.58 2.67 4.69 6.89 11.75 17.34 19.50 0 9.69 14.91 28.16 38.99	0.136 .516 .874 1.17 .44 .52 .20 0.837 0.685 0.386 1.58 1.21 0.384 0.156	0.130 .434 .710 .93 1.06 1.16 0.98 .660 .577 0.371 1.24 0.96 0.343 0.148	
(4+3) ,	(3+2)	, (2+1) ,	, (3+1)	, (4+1)	, (6+1)					

004				IODINE ,					
Iodine	e (I) + /	Arsenic (A	s)		Iodine	(I) + Ant	imony (Sb)	
I	igh, 1912				11	and Doornbo		and 1912	
8	f.t.	E	min.		and Doo	rnbosch, 19			
0 1 2 5 10 12 14 16 18 20 22 23,5 25	114.5 113 110.5 104.5 89.5 82 76.5 86.5 94.5 102 115 123 135.5	70.5 71.5 71.5 71.5 71.5 71.5 71.5 71.5 71	32 73 123 186 ? 266 208 166 140 89 - (2+1)	(3+1) bosch, 1912	\$\\\ 100\\ 89.5\\ 79.1\\ 75.0\\ 70.9\\ 58.7\\ 48.6\\ 28.9\\ 24.0\\ 23.4\\ 22.7\\ 20.5\\ 18.8\\ 16.5\\ 14.2\\ 11.3\\ 10.7\\ 7.9\\ 4.3	632.0 168.9 170.45 170.30 170.15 170.25 168.95 169.7 170.8	166.5 167.25 169.05 169.9 168.5 168.6 168.45 168.1 170.3 147.0 134.25 117.7 96.55 84.45 79.85 82.0 92.85 103.75	E	min. 130 230 330 330 380 500 580 630 780
%	f.t.	E	min.		0.9	113.35	103,75	79.15 77.0	720 210
			f.t.	m.t.	ļ			(3+1)	
0 15.8 29.7 32.0 42.1	122.5 127.8 131.5 133.5	117.3 120.5 118.9 119.1	- 90 60 90 200	150 200 300 290	Querci %	gh, 1912 f.t.	E	min.	
53.0 62.9 71.8 77.2 77.5 78.2 79.0 79.8 81.0 81.7 82.8 83.55 83.7	133.5 134.9 134.7 132.9 134.6 136.8 136.5 131.1 121.8 128.9 137.6 140.7 139.9 134.9	119.7 119.7 120.0 120.1 119.8 119.6 119.3 120.7 121.5 121.5 121.2 114.3	290 370 310 400 490 - - - -	380 380 480 540 530 485 480 600 1100 640 160	0 2 5 10 13 15 16.66 19 225	114.5 109 102.5 88 83.5 94.5 106 119.5 137	79.5 80 80 80 80 79.5 80 80	48 149 380 ? 402 339 258 170	(3+1)
84.1 86.8 90.6 91.1 92.2 93.8 97.0 99.7 100.0	134.9 111.4 80.3 73.7 76.6 87.2 102.6 111.7 113.3	72.9 72.4 72.9 73.75 72.75 72.50 72.0	-	250 740 1380 1500 1420 1220 850 110		(I) + An ikov, Fialko			(SbI ₅)
1	(2+1)		(3+1)		wt%	mol%	и		
							130°	140°	
					0 0.97 4.87 15.99 31.58	$\frac{1.69}{5.99}$	0.078 .086 .112 .188 .324	0.076 .082 .108 .188 .329	

P 5° L ₁ 48.8 62.2 105.1	mol% -183	р		t - 195 - 188		L ₂		
5° L ₁ 48.8 62.2 105.1	-183			-188	5.3			
48.8 62.2 105.1		3.0°		-188	าก กั			
105.1	93.90	251.6 304.8	-	-183 -182 -181	10.0 18.0 24.5 .T. = -180°	58 48 44.5 -		
109.0 123.7 138.9 141.4 149.1 153.4	92.68 91.09 90.42 90.37 86.12 84.98 84.77 78.68 78.42 70.03 69.90 70.00	369.4 440.0 457.5 449.9 557.8 563.2 601.9 652.1 658.9 698.4 697.8		Bir	dsall, Jenki	·	1955	
153.1 158 152 147	64.43 63.62 63.16 60.64	703.8 699 716.7 700.0 699		Uni	ts: Atm., 1	iter/mole, °	°K (0°K = .	
155	27.53	717.4	<u>pa</u> :	ram.	-112°			_50°
154	23.63 23.63 22.06 21.24	698.4 706.0 725.0 712.1	[β,	/RT	-0,3127366 +0,0061452 +0,0000928	-0.2755434 +0.0064097	-0.217555 +0.006487	51 -0.17647 70 +0.00625 99 +0.00003
	18, 82	716.7				8	30%	
158 158 158 158	16.22 12.92 10.67 8.62	705.3 732.6 743.3 741.0	β	/RT	-0.2534684 +0.0052347 +0.0000550		+0.005287	38 _ 0. 14211 74 +0.00503 01 +0.00002
	0	760.0			-0.2003611 +0.0043690	-0.1763348 +0.0043825	+0.004230	20 - 0. 11123 01 +0.00397
		937.0	Y /	/RT	+0.0000312		_	58 +0.00001
600.8 579.7 744.1 894.8	51.05 46.71 37.44 36.87	960.2 964.4 961.2 977.1	β,	/RT	-0.1534149 +0.0035619 +0.0000157	-0.1348190 +0.0035100 +0.0000127	-0.105259 +0.003311 +0.000006	96 -0.08384 17 +0.00307 84 +0.00000
938.1 956.0	28.31	971.8	β ,	/RT	-0.1126296 +0.0028241 +0.0000068	-0.0986956 +0.0027375 +0.0000054	-0,076326 +0,002527 +0,000003	67 -0.05993 70 +0.00231 36 +0.00000
	2 I	,		/RT	-0.0780054	-0.0679646	-0.051643	33 -0.03951
72.4 29.	0 86 8 63		· · ·				+0.000001	77 +0,00109 12 +0,00000
	L ₁ + 153.1 158 152 147 155 155 155 154 L ₂ 152 158 158 158 158 158 160 -180 342.6 600.8 579.7 744.1 894.8 8938.1 956.0	78.42 70.03 69.90 70.00 L ₁ + L ₂ 153.1 64.43 158 63.62 152 63.16 147 60.64 155 27.53 155 27.53 155 27.27 154 23.63 23.63 22.06 21.24 L ₂ 152 18.82 158 16.22 158 12.92 158 16.22 158 16.22 158 16.22 158 16.26 60.67 158 8.62 160 6.26 0 180° 342.6 6.26 6.26 0 180° 342.6 6.26 0 21.24 158 10.67 158 8.62 10.67 158 8.62 10.67 158 8.62 10.67 158 8.62 10.67 158 8.62 29.8 66 600.8 51.05 579.7 46.71 41.1 37.44 894.8 36.87 898.0 36.87 898.0 36.87 9938.1 956.0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	153.4	153.4	153.4	15.4

param25°	-12.1° 0°	+25°			
	100%	Jenkins	and Di Paolo	, 1956	
α/RT -0.145851 β/RT +0.005915 γ/RT +0.000025	0 + 0.0057204 + 0.0055397 + 0.	0051682	%	t	đ
7/KI +0.000025	4 +0.0000218 +0.0000191 +0. 80%	0000146	100		1.5727 .5839
α/RT _0,116814 β/RT +0,004720	3 -0.1060837 -0.0971324 -0. 3 +0.0045525 +0.0043965 +0.	0813636	n.c. 9	-185.6 -195.6	.5039 .6130 .5489
7/RT +0.000015	3 + 0.0000131 + 0.0000115 + 0.		96.8 92.4	-183.0 -195.7 -195.8	.5724
⊈/RT -0.090724	60% 0 -0.081991 2 -0.0746909 -0.	3617053	91.7 88.6	-193.8 -183.1 -182.9	.5678 .5086
β/RT +0.003696 γ/RT +0.000008	4 +0.0035538 +0.0034235 +0.	0031685	86.6 79.4 24.1	-183.0 -183.1	.5050 .4596
17K1 (0,00000)	40%	7000049	24.1	-103,1	.2234
α/RT _0.067580- β/RT +0.002832-	4 -0.0606244 -0.0547956 _0. 4 +0.0027145 +0.0026085 +0.			η	
γ/RT +0.000004			-183.0°		
/mm 0 0 17000:	20%	0 10		200 240	
α/RT-0.0473834 β/RT+0.0021165	-0.0419848 -0.0374467 -0.02 +0.0020222 +0.0019387 +0.00	17807		280	
γ/RT+0.0000018	+0.0000016 +0.0000014 +0.00	00011 70 80		L ₁ + L ₂ 800 1000	
α/RT -0.0301332	-0.0260709 -0.0226440 -0.01	65209 100		1300 1540	
β/RT+0.0015365 γ/RT+0.0000006	+0.0014641 +0.0014009 +0.00 +0.0000005 +0.00	12802			
				7722	
param. 50°	75° 100° 125	·			
α/RT -0.0876722	100% -0.0747487 -0.0637982 -0.0	5 4 20 4 3			
β/RT +0.0048159 γ/RT +0.0000115	+0.0044885 +0.0041872 +0.0	039111			
7,81 10,0000113	80%	000082			
α/RT -0.0684317 β/RT +0.0037956					
7/RT +0.0000069	+0.0000055 +0.0000045 +0.0				
α/RT -0.0511858	60% -0.0422955 -0.0347315 -0.0	282133			
β/RT +0.0029348 γ/RT +0.0000039	+0,0027225 +0,0025303 +0.0	023562			
,	40%				
α/RT -0.0359347 β/RT +0.0022208	-0.0287644 -0.0226484 -0.0 +0.0020557 +0.0019075 +0.0	173667 017741			
7/RT +0.0000019	+0,0000016 +0,0000013 +0.0	ŏōóóiō			
α/RT -0.0226783	20% -0.0170303 -0.0121987 -0.0	080160			
β/RT +0.0016405 γ/RT +0.0000008	+0.0015160 +0.0014051 +0.0	013060			
	0%				
$^{\alpha}$ /RT -0.0114666 $^{\beta}$ /RT +0.0011803		009396			
γ/RT +0.0000003	+0.0000002 +0.0000002 +0.0	000001			
		}			
		1			

0xygen (θ_2) + Nitrogen (N_2)	11		oar, 1927			
Inglis and Coston 1004	l mo	01 % V	P	m c L	01 % V	Р
Inglis and Coates, 1906 $C_2^* \qquad p_2 \qquad C_1 \qquad p_1$	E0.05	02.20		-196°	05.41	0.0715
-198,33°	50.85	83.38	-3	182.5°	95.41	0.8712
0.0 - 122.3 100.0 5.6 34.5 114.0 95.5 7.7 47.5 111.1 93.5	5.42 11.00 17.59	17.37 30.94 43.60	1.174 1.360 1.551	44.89 49.57 50.61	72.80 75.87 76.36	2.302 2.401
11.9 72.7 105.1 90.0	17.88	44.11	$\frac{1.559}{1.586}$	53.06 64.79	78.06 85.04	2.467 2.501 2.799
17.1 104.5 97.6 85.5 21.3 129.5 91.3 81.0 25.7 155.7 85.0 77.0 30.2 182.5 78.3 72.5	27.13 39.03	46.37 56.59 68.37	1.808	83.74	93.70	3.262
17.1 104.5 97.6 85.5 21.3 129.5 91.3 81.0 25.7 155.7 85.0 77.0 30.2 182.5 78.3 72.5 32.8 197.9 74.5 69.9 36.5 218.6 69.1 66.4 40.2 242.0 63.7 61.7 42.5 255.4 60.3 59.6 45.8 274.6 55.5 55.9	5.00 7.01	13.09 18.65	2.729 2.903	42.48 48.75	66.66 71.29	4.760 5.043
32.8 197.9 74.5 69.9 36.5 218.6 69.1 66.4 40.2 242.0 63.7 61.7 42.5 255.4 60.3 59.6	9.95	24.55 31.29	3.022 3.256	58.97 63.76	78.52 81,63	5.623 5.841
45.8 274.6 55.5 55.9 48.9 293.3 50.9 53.4 52.2 314.3 45.9 48.7	17.91 25.12	$\frac{38.94}{49.08}$	3.452 3.845	80.56 90.86	90.77 95.78	6.640 7.180
§ 53.0 318.8 44.9 47.7	6.52	15,17	6.033	53.11° 58.08	74.36	10.734
61.6 374.6 32.1 36.6	12.66 20.17 41.69	26.26 37.50 61.44	6.606 7.286 9.231	63.09 79.82	77.87 88.39	$11.136 \\ 12.651$
1 72.6 450.7 15.7 20.3	12.02	21.88	-15	90.45 3.24°	94.63	13.663
75.9 475.8 10.7 14.2 79.2 500.8 5.8 8.2 82.6 528.5 0.5 0.5	19.18	32.37 45.96	11.850 12.880 14.505	55.26 62.49 79.00	68.46 74.15 85.86	18.068 18.939 21.482
83.0 531.0 0.0	41.11	56.22	15.952	88.38 8.16°	92.11	22.981
$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	10.93 19.50	20.24 30.95	15.531 16.857	62.25 78.28	71.95 83.86	24.298 27.349
11.0 114.3 104.6 181.2	40.37 54.08	53.71	20.450	88.00	90.89	29.332
27.8 284.8 82.0 150.7 38.5 402.2 64.3 127.8 47.1 495.5 51.5 108.5 54.3 577.6 40.5 89.4						
1 63.4 684.7 26.9 65.3		1000				
70.2 773.6 16.6 42.4 75.3 845.6 8.7 24.4 80.8 931.0 0.0 0.0	Baly	1900	b.t.	%	h	t.
* $C_2 = gr.N$ in liquid $C_1 = gr.0$ in liquid	L	V		L	<u>v</u>	
	100.00	100.00	-195,46 195,0	59.55 S	30.69 -1	.88.5 .88.0
Trautz and Emert, 1926	97.82 95.62 93.20	91.90 84.75 78.40	194.5 194.0	47.81 2	14.90 1 12.20 1	.87.5 .87.0
t p excess pressure (in mm)	90.67 88.00	72.33 66.65	193.5 193.0	39.47	7.05 1	86.5 86.0 85.5
15 748 0.02 (to Dalton's law)	85.22 82.34 78.78	61.47 56.62 52.08 47.83	192.5 192.0 191.5	30.42 1 25.63 1	$\begin{bmatrix} 2.40 & 1 \\ 0.18 & 1 \end{bmatrix}$	85.0 84.6
	76.40 73.27 70.05	47.83 44.06 40.45	191.0 190.5	20.55 15.45 10.20 4.90	8.02 1 5.91 1	84.0 83.5
Keesom and Tuyn, 1932	66.65	37.07	190.0 189.5 -189.0	4.90 0.00	3.85 I 1.84 I 0.00 -1	83,0 82,5 82,04
P PV P PV						
-120,760						
53.3 0.2964 44 0.3610 50.8 .3150 42 .3731 50 .3205 40 .3847						
30 .3205 40 .3847 48 .3345 38 .3957 46 .3480						!
						İ
	<u> </u>					

Keesom	and Tuyi	n, 1932				Ruhem	ann, 1936				
mo1%		t	mo1%		t	%	f.t.	m.t.	%	f.t.	m.t.
	V 0 10 20 30 40 50 e authors	-164.14 -165.18 -166.30 -167.50 -168.78 -170.16 s give al	L 36.25 47.25 60.5 77.4 87.4 100.0 so molar en	70 80 90 95 100	.171.64 .173.26 .174.99 .176.87 .177.87 .178.95	0.0 6.0 10.3 11.75 14.0 15.2 15.75 18.3 19.7 20.1 20.3 21.9	-219.1 219.8 220.2 220.9 221.2 221.6 221.31 222.1 222.8 222.51 222.2 -222.7	-219.1 221.01 222.41 222.89 223.0 223.1 223.1 223.1 223.1 223.1 223.1 223.1	22.6 23.6 25.0 29.6 30.7 31.0 50.7 58.0 77.5 90.1 100.0	-223, 1 222, 8 222, 7 222, 2 221, 81 221, 3 217, 8 216, 11 212, 9 211, 6 -210, 1	-223.1 223.1 223.1 223.1 223.1 223.1 221.31 220.0 217.41 213.61 -210.1
Armstro	ong. Gold	stein and	Roberts, 1	955		Prikh	otko, 1939	9			
P		1 %	P		1 %	76	f.t.	m.t.	%	f.t.	m.t.
 	L	v	-	L	v	0	-219	· · · · · · · · · · · · · · · · · · ·	60	-216	-219.5
0.27691 .38793 .51037 .51022 .50950	6.32 18.75 31.03 31.13 31.13	28.41 56.10 69.45 69.45 69.45	0.65199 .66096 .67928 .68718 .75479	50.73 51.19 54.77 59.06 64.78	82.38 82.80 84.64 85.72 88.71	10 20 30 40 50	220 222 221 219.5 -217.5	-222 222.5 222.5 222 -221	70 80 90 100	214 212 210.5 -210	217.5 215.5 213
.53891 .53755 .53499 .56543 .56364 .67729	31.28 34.61 34.62 37.35 37.82 46.70 47.89	72.48 72.48 72.48 74.44 74.80 81.65 80.82	.75271 .75813 .82861 .82865 .89492 .91829	65.11 65.63 74.99 77.38 80.70 88.75 91.04	88.99 89.11 92.46 93.27 94.33 95.73 97.46	Kuen P	en, Versch molar vol	noyle and		, 1923 volume	
			3.2°	72.01	<i>></i> 7.10		50	vol%			
0.08695 .12237 .15130 .20605 .22291 .26103 .24328 .27588	5.43 15.09 23.81 36.94 43.25 discarded 49.61 60.90	85.28 89.82	0.28628 .30578 .33499 .35274 .34989 .33732 .36663	65.60 71.17 79.67 84.79 87.74 90.74	91.14 93.07 95.21 96.75 97.13 97.95 97.29	34.03 34.24 37.28 37.55 41.12 41.39	0,03112 .03087 .02838 .02812 .02565	7 46.41 8 51.85 2 51.88 5 52.35	. 022 . 020 . 020	271 026 025	
0.03218 .02978 .02876	2.99 3.09 3.10	-20 24.89 24.52 24.37	8.2° 0.10433 .10686 .12261	47.89 48.34 60.41	86.59 87.02 88.48	37,12 44,81	0,01080 ,00 7 93	3	0.005	533	
.02876 .03013 .03086 .04741 .06866	3,10 3,12 3,12 3,23 10,73 23,96	24.96 24.12 25.05 53.11 73.24	.12266 .13079 .12916 .13675	60.57 61.11 66.44 73.34	90.84 90.44 92.55 95.25	36.57 43.23	0.00994 .0072]		0.004 .003		
.07013 .06712 .08055 .08124 .08225 .08345	24.24 24.31 30.57 30.92 30.98 31.13	73.89 74.11 78.65 78.62 78.99 79.25	.13533 .13457 .14168 .14108 .13793 .14579	73.57 73.65 74.12 74.42 74.47 81.12	93.88 94.82 95.31 95.36 96.10	35.65 38.38 41.03 43.16	0.00907 .00771 .00639 .00513	1 45.26 46.73	,002	345 295	
.10025	42.52 47.48	86.44 84.13	.15558 .16359 .17028	84.52 92.82 93.68	96.89 98.74 98.74	41.69 42.16	0.00306 .00284 _1		0.002 .002		i
						35,41 37,95 40,33 41,91	0.00882 .00749 .00615	42.67 44.17 52.44		90	

192 520	-119 .9 6°
-132.52° 35.08 0.00886 41.90 0.00404	33.93 0.01206 45.88 0.00704 35.00 .01151 48.66 .00608 37.20 .01045 50.64 .00540 39.31 .00956 53.36 .00443 39.55 .00944 55.97 .00355 42.27 .00835 59.13 .00294 45.54 .00715
# 37 57 00751 42 t3 00369	35.00 .01151 48.66 .00608
39.03 .00670 42.25 .00347 40.34 .00584 42.78 .00303	37.20 .01045 50,64 .00540 39.31 .00956 53,36 .00443 39.55 .00944 55,97 .00355 42.27 .00835 59,13 .00294
41.02 .00532 43.38 .00285	39,55 00944 55,97 00355 42,27 00835 59,13 00294
41.60 .00458 46.60 .00253	42.27 .00835 39,13 .00294 45.54 .00715
-132,55° 41.84 0.00410 41.93 0.00395	_122,47°
41.84 0.00410 41.93 0.00395 41.89 .00403	33,29 0.01183 48.02 0.00535
-132,60°	35.82 .01055 50.16 .00426 38.60 .00926 52.05 .00327
41,60 0.00436 41.92 0.00379	41.72 .00793 54.15 .00280
41.62 .00433 41.95 .00372 41.77 .00406 41.97 .00373	
41.85 .00392	_125.00° 32.71 0.01159 46.04 0.00467
-13 2. 64°	1 35 50 01006 46 83 .00359
41.46 0.00455 41.91 0.00366 41.75 .00399 41.91 .00366 41.80 00360	38.40 00869 47.51 00293 41.19 00737 48.73 00265
11.07 .00007	44.28 .00587 50.60 .00248
-132.679	_125.42°
41,40 0.00455 41,89 0.00362 41,61 .00413 41,90 .00358	32.68 0.01149 45.67 0.00440 35.97 .00973 45.93 .00382
_133,01°	35.97 .00973 45.93 .00382 39.30 .00813 46.14 .00346
95 30 0 00067 41 03 0 00421	35.97 00973 45,93 00382 39,30 00813 46.14 00346 42,54 00657 46.59 00294 44.89 00520 47,95 00261
37.58 .00728 41.08 .00408	_125.53°
39.67 .00594 41.29 .00373 39.92 .00574 41.34 .00358	45.89 0.00369 45.86 0.00375
40.62 .00499 41.46 .00336 40.65 .00527 41.62 .00310	45.90 .00345
40.73 .00482	-125.60°
_134 . 51°	45.49 0.00419 45.85 0.00333 45.72 .00366 45.89 .00336 45.81 00347
34.52 0.00843 39.01 0.00346 35.89 .00757 39.14 .00318	40,01
37.03 .00680 39.22 .00277	-125.64°
37.60 .00624 39.40 .00267	44.89 0.00394 45.75 0.00343 45.36 .00433 45.80 .00328 45.46 .00408 45.83 .00321 45.59 .00378
37.98 .00574 39.46 .00263 38.41 .00478 40.15 .00256	45.46 .00408 45.83 .00321
38.58 .00442 42.64 .00242 38.80 .00390 44.25 .00237	,, ,
_135,95°	_125.73° 45.65 0.00326 46.19 0.00277
33,21 0.00860 36,60 0.00382 34,32 .00720 36,90 .00302	45.70 .00307
34,32 00790 36,90 ,00302 34,85 ,00733 37.09 ,00262	- 125.75°
35,21 .00692 37.19 .00246	
35,66 .00584 37,56 .00242 35,82 .00521 39,77 .00234	44.43 0.00523 45.38 0.00378 45.09 .00453 45.40 .00354 45.12 .00448
36,14 .00459	-125.97°
_138,01°	
32.02 0.00842 33.65 0.00382 32.31 .00755 33.75 .00355	32.53
32.57 .00684 33.84 .00331	42.37 .00641 45.51 .00287 43.68 .00561 46.11 .00267
32.78 .00621 33.99 .00293 32.98 .00564 34.11 .00263	42.37 .00641 45.51 .00287 43.68 .00561 46.11 .00267 44.67 .00474 48.83 .00248
33.16 .00514 34.16 .00253 33.37 .00457 34.24 .00230	44.67 .00474 48.83 .00248 44.75 .00460
33,54 .00457 54.24 .00250 33,54 .00415	-12 7.9 9°
- 140 . 95°	32.74 0.01076 41.55 0.00409 35.41 .00926 41.70 .00371
28.99 0.00585 29.85 0.00322	35,41 .00926 41,70 .00371 38,10 .00785 41,88 .00318
29.41 .00452 30.09 .00227	40.19 .00663 42.04 .00288
25 vol%	40.95 00592 42.28 00242
+20°	41,14 .00529 43,17 .00236 41,38 .00462
28,89 0.03656 42.90 0.02444 32,69 03225 45,18 .02318	1.2,00
35.91 .02928 48.79 .02144	
36.91 .02851 51.68 .02020 40.12 .02618 56.40 .01848	
10172 102010 00110 101010	
<u> </u>	

	1
	_125°135°
Michels, Wassenaar and al., 1954	7,3439 18,379 6,8143 18,438 10,1356 25,889 9,3730 25,975
P d (g/1) P d (g/1)	12.5588 31.381 13.5763 70.427
_25° _50°	21.4750 60.209 27.3337 94.804
6,6779 9,5560 6,0336 9,6302	30.6848 94.430 32.1803 122.323 1 36.7821 121.813 37.0785 159.528
8.6945 12.4661 7.8494 12.5634	43.5380 158.820 40.5263 197.185
12.3750 17.8041 11.1553 17.945 17.3426 25.0644 15.6007 25.266	53.4480 232.573 43.4204 245.136
21.7907 31.6178 19.5637 31.874 30.3879 44.4102 27.1805 44.780	54.6785 243.921 45.0669 283.953 58.6858 282.479 46.4912 322.692
39.5086 58.1453 35.1949 58.645	62.6324 320.960 47.9704 361.288
77 8551 117 1921 68 1555 118 292	1 72 9774 402 939 54 9080 456,707
100.609 152.4865 87.2043 153.976 123.918 188.0558 106.358 189.960	82.8911 453.723 65.9898 514.945 101.528 511.198 95.9891 583.383
147.257 222.4131 125.271 224.743	142.243 578.662 164.660 654.549
181.555 269.650 152.730 272.530	223.891 649.174 278.754 717.052 351,966 711.920
210.485 305.868 175.799 309.174 242.367 341.911 201.196 345.608	_138°139°
283.735 382.983 234.257 387.079 340.731 430.637 280.375 435.111	38,4841 208,244 37,51111 208,350 40,8793 282,934 39,4819 283,089
1 422 122 485 042 347 215 489 780	43.2128 395.397 41.1184 395.627
750,946 620,940 627,468 625,527	53,5263 507,578
1009,600 686,043 855,922 690,357	-141° -143° 33.0458 159.872 31.6590 160.022
_70° _85°	35,5622 208,568 33,1640 208,823
5.5107 9.6898 6.6404 12.7016 7.1627 12.6421 9.4074 18.1449	
10.1622 18.0586 13.0991 25.553 14.1813 25.429 16.3642 32.241	37,0609 396,070 33,9488 396,417 43,3220 508,680 36,6186 509,401
17.7481 32.084 22.5564 45.310	-145° -146°
31.6642 59.050 43.3392 92.999	6.2782 18.498 23.9680 98.465 8.5991 26.061 28.8070 160.330
47.8700 92.485 54.0281 119.885 60.1729 119.193 67.5949 156.156	14,1305 46.259 29.8218 310.138
76.1379 155.206 80.6333 192.779 91.8457 191.547 93.0323 228.228	17.5105 60.652 23.8614 95.192 -147°
107.084 226.702 96.9083 239.345	1 24 3417 98.424
1 128.857 274.987 124.808 314.338	30.0804 160.201 26.9707 100.328
147.020 312.053 140.614 351.513	30.7798 284.014 27.4999 284.952
193.253 390.764 191.592 442.753	31.0739 396.740 27.7516 397.114 31.1966 509.986 27.8440 510.383
230, 299 439, 261 237, 142 498, 167 285, 150 494, 270 315, 673 563, 776	48,564 588,394
376.944 559.674 446.334 633.920 525.232 629.945 629.558 698.056	103.270 660.690 -149° 203.645 723.231 22.8396 98.593
728.347 694.447	_150°
_100°115°	22,2591 98,658 25,9614 510,608
6.1127 12.761 7.8671 18.320 8.6424 18.232 10.8893 25.804	23.5107 160.896 -155° 23.6817 209.846 -155°
12.0021 25.677 13.5280 32.565	23.9080 284.796 7.8122 26.150
20.5197 45.540 23.3938 59.991	24.1666 510.819 15.4301 60.882
26, 2065 59, 672 33, 9449 94, 063 38, 7032 93, 527 41, 2412 121, 316	18. 3934 99. 065 19. 0216 210. 352
47.7291 120.591 49.7704 158.132	21,2005 98,769 19,1681 285,323 22,2409 284,979 19,2806 398,086
60 1104 194 047 63 6908 231.447	19.3453 511.390
73,5650 229,812 65,5925 242,732 81,4806 241,008 71,9972 281,039	19.7693 98.919 125.927 730.631
91 4765 278 943 78 5659 319 243	
1 113 525 354 310 95.5369 400.544	
123.967 397.068 110.757 450.767 151.752 446.599 136.542 507.586	
187.704 502.587 187.224 574.310 252.541 568.613 281.441 644.497	
365,147 638,665 423,440 707,632	
527,967 702,355	
	ii

Fuchs, 1918	Liquid and Crystalline State .
vol% Dv vol% Dv	
19.5°, 716 mm 0 0 60 1.11	Grunmach, 1901
	% d % d
$\begin{bmatrix} 20 & 1.07 & 90 & 0.34 \\ 40 & 1.21 & 100 & 0 \end{bmatrix}$	-190.3° 50.1 0.984 32.4 1.042
50 1.27	36.1 1,028 25.6 .066 34.7 .034 23.55 .074
	33.2 .039 23.3 .075
Jackmann, 1906	Grunmach, 1901
mol% diffusion coefficient (cc/sec.)	% 0 % 0
15° 50 0.203	- 190, 3°
53,3	50.1 11.61 32.4 11.91 36.1 11.89 25.6 12.23 34.7 12.05 23.55 12.51
	34.7 12.05 23.55 12.51 33.2 11.90 23.3 12.63
Schmitt, 1909	
t n t n t ri	Prikhotko, 1939
100% 74.42% 49.21% 14.0 17.38 14.7 18.12 13.5 18.82	Absorption spectra in crystal lattice
101,1 21,34 100.0 22,13 99.6 22,93 183,0 24,64 183,5 25,69 183,2 26,77	(triplets w.l.)
30.76% 0%	70% layer thikness=0.5 mm layer thikness=10 mm
13.4 19.39 16.8 20.23	I 2747.5 II 2749.2
98.8 23.64 99.7 24.85 182.7 27.76 185.8 28.85	2735.8 2746.1 2725.1 2738.0
	2735.5 III 2697.8 2727.4 2686.5 2724.9
	2676.3 111 2697.4
Trautz and Melster, 1930	IV 2646.5 2695.4 2686.2
% n 26.9° 126.9° 226.9° 276.9°	2627.7 2683.8 V 2605.3 2675.6
0 20.57 25.68 30.17 32.20	2594.6 IV 2649.0 2584.8 2646.3
18.64 20.08 24.89 29.20 24.08 19.95 24.80 29.09 31.09	VI 2565.3 2638.1 2635.0
58.95 18.94 23.45 27.41 29.32 59.20 18.93 23.42 27.41 29.28	2546.1
78, 22 18, 43 22, 75 26, 58 28, 40 100, 00 17, 81 21, 90 25, 60 27, 27	VII 2529.3 V 2605.3 2520.3 2602.6 2511.3 2594.9
	VIII 2498.6 2585.7 2490.2 VI 2565.4 2481.7 2555.3
	IX 2470.0 2545.8 2462.7 VII 2529.0
	2455.9 2489.7
	X 2446.8 2477.6 2438.7 IX 2469.5 2461.5
	2452.2 2452.2 2444.7

0/2					NI I KOGE					
		05/	a							
layer	90% thickness=10 mm	959 layer t	hickness=20 mm		Dianov	-Klokov	1955			
11	2748.8	11	2747.2	-	%		extinction	coeffi	cient	
1	2737.2 2725.5		2736.4 2726.8		1	290 Å		5325		4472
	2716.9	111	2697.0	-				196°		
111	2698.1 2694.5		2693.3 2685.0		2	0,409		0.058	0.198	0.035
	2687.1 2684.2		2682.7 2675.2	-	0.5(?) 4.8		.57 .545	.062 .059	. 190 . 193	.034 .028
	2681.8 2675.8		2672.9		5.5	. 37	.54	.058	. 192	,032
	2671.2	IV	2643.8 2646.2	1	$\frac{12.1}{14.7}$.349 .30	.49 .422	050	. 165 . 144	.029
IV	2649.4 2646.5		2636.9 2628.3		27.5 46.5	.22 .101	.30 .134	.030 .016	.105 .052	.023 .005
	2637.4	v	2605.1	1	57.1 67.9	.070 .040	.094 .054	.013	$033 \\ 021$. 005
	2628.7 2626.8		2603.2 2593.8	∦ ∦	84.7	.009	.015	-	.003	-
			2585.4	-						
VI	2565.4 2555.3	VI	2565.6 2564.6	ii.	%	3808	extinct 3612	ion coes 343	fficient	185
	2546.4		2555.3 2547.1	-		3000				
VII	2529.4 2520.4	VII	2529.0		2 0,5(?)	0.134 .127	0.218 .197	0.0		009 014
	2512.1		2520.1 2513.1	- 1	4.8	. 119	. 206	.0	56 .	013
VIII	2499.4 2490.2	VIII	2499.8	1	$\frac{5.5}{12.1}$. 120 . 105	.203 .170	.0	56 -	010
	2481.0		2489.6 2481.1	[14.7 27.5	.093 .066	. 150 . 106	.0	45 . 31 -	007
IX	2470.8 2463.2	IX	2470,8		46.5 57.1	.032 .020	.053 .033	.0	13 .	003 001
			2462.7 2455.4		67.9	.006	.018	-	-	
		X	2449.0	::				در سار دین دید داد داد کار کار در حال جار مال دید کار کار کار		
			2440.9							
					Keesom	and Gui	11ien, 19	36		
				-	t	В	t	В	t	В
Perri	er and Onnes, 19	14]-	0%	– –– ––	8,83		31.8	
			<u>τ</u> χ		-194.58	20,32	- 194.46		-194.56	20.00
d	t X* 760 mm	t χ 300 mm	t X 100 mm	į.	199.08	31.64 33.86	198.11 201.06	28.38 30.25	197,96 201,26	21.50 22.82
	0%				202,36 205,61	36.69	204.96	32.80	205.41	24.65
1,204 .235	-195.65 2 59.6 -195.65 -		75.4	ĺ	207.41 -208.26	$\frac{38.16}{38.31}$	206.29 -208.46	33.77 35.17	207.31 -208.46	25.63 26.18
267	-195.65		208.84 284		40,4		44.6%		67.1	6%
			,		-195.01 196.06	$18.12 \\ 18.53$	-195.34 200.96	17.14 18.87	-195.11 196.86	12.82 13.30
g*	t ^χ 760 mm	t 300 mm		l	199,27	19.71	209.44	22,74	198.19	13.72
	700 IIIII	300 11411	100 mm		199.66 202.31 202.76	19.84 20.96	-209.91	23.08	201.50 205.34	14.60 15.82
0.7458 .4010	-195.65 294.5 -195. 7 9 336. 7	-202.23 3	14.5 -208.84 336	.5	202.76 206.54	21.02 22.64			207.36 208.61	16.33 16.63
. 2304	-195.60 363.8	-202.23	14.5 -208.84 336 59.6 -208.84 390 93.0 -208.84 423	.59	207.44 -208.61	23,30				
.1380 .0801	-195.65 383.6 -195.80 395.8	-202,23 4 -	20.4 -208.84 459 208.84 472			3.81%	92.93	3%	100)%
* 2 - 2	r. 0 in 1 cc mix	ture			-194.71	10.28	-195.79	8.91	-195.62	7.86
	y 1 gr. 0				197.98 201.21	10.96 11.12	197.46 202.26	$9.18 \\ 10.13$	-195.68 -19 7. 91	7.98 8.17
	-				205.01 206.96	12.75	208.14	11.25	-198.16 -200.83	8.21
					-208.99 -208.09	12.99 13.24	-209.14	11.37	-202.16	8.68 8.87 9.25
									-204.37 -205.31	9.39
				1					-207.99 -209.31	10.00 10.10
				Į.	B = Ke	rr const	ant, 109		_209.79	10.38

Gaume, 1952	Su1	fur (S) +	Seleniu	ım (Se	,		
% Verdet's constant.102 (mn/gauss/cm)	Rin	ger, 1	902					
-209° -191° 0 0.941 0.826 42.1 .764 .667	% thermic method m.t. f.t.			dilatometric method				
59.1 .682 .601 79.5 .586 .522 83.5 .566 .522 92.1 .524 0.474 100.0 .487 .445	0 10 20 30 40 50 56	10 114 20 - 30 - 40 - 50 - 56 -		119 116.5 114.2 103 106 130	-	9	115 105 130 135	
Trepp, 1956 (fig.)	60 65 70 74 80 83.5 90	217,	- 136 - 150 - 170.5 - 188 7.4 217.8		14 16 16 17	137 147 160 162 175		
3 3.0 82 5.0 6 7.2 84 3.8 15 5.4 88 4.1 20 - 92 3.0 30 5.0 94 2.7 40 4.5 98 5.0 49 8.0 100 1.1	2.05 4.25 7	6	91 83	23.5 -93 3.86 -82				
h = hardness, in Kg/mm² N.B. There are also curves : hardness_temperature, for different concentrations.		umoto,		E	4	f.t.	m 1	E
Hammann, 1938 # Heat conductivity.10 ⁴ (cal/cm/sec.) -200° 4.98 30	100 95 90 85 80 75 70 60 55	207 156 143 122 118 114 112 110	152 129 119 - 110 107 102 99	116	50 45 40 30 25 20 15 10	107 106 99 108 109 110 110 110	99 - - 98 100 101 104 -	- 98 97 98 - - - -
	Mery % amorpho		l Lars	sen, 191 Na ai	2 % norphou	s Li	n	Na Na
	0.0 9.0 17.6 25.0 31.8 37.5 43.2 53.0	1,9 2,0 .0 .0	978 900 925 950 975 900 125 50 775	1.998 2.022 .050 .078 .107 .134 .163 .193 .220	57.0 64.0 70.0 75.0 80.0 87.7 93.8 99.2 100.0	2,20 ,25,30 ,35,40 ,500 ,700	0 2 0 0 0 0 0 0	. 248 . 307 . 365 . 423 . 490 . 624 . 755 . 90 . 92

Sulfur	(S) + Telluri	um ()	Ге)			Kraus	and Johnson	n, 1928		
						t	и(mhos)	t	ж(mhos)	
	ni, 1910						10	0%		
atom 9	f.t.	E	min	•		480.5 466.0	2050 L 1910	450.0 438.0	166 7 1543	
100 98 95	451 441.5	-	-			457.2 449.1	1810 1730	404.7	85.54 C 75.13	
95 90 80	435 431.5 420	103	90 5 163			437.0 431.8	1570 1510	380.5 369.0	67.52	
70 60	409	105 103	187 219			499.9 483.1	2016 1920			
50 40	39 7. 5 38 7. 5 368	109 110,	257			463.8	1 77 3	5 atom%		
30 25	34 7. 5 349	110 107	343 383			477.0	1485 L 1424	427.5	9 7 3	
20 10	321.5 298	106, 108	,5 414 536			469.9 464.0 455.0	1368 1368 1280	428.0 409.5	72.72 C	
5 2	212 163	10 7 10 7				440.3	1122	382.0	49.48 42.12	
$\frac{1}{0}$	-	110	868			474.8	401.1	5 atom% 445.3	198.9	
						464.0 461.2 455.6	317.9 300.7	436.5 425.5	157.0 1 1 4.4	
	tr.t.					455.6	263.2	O atom%		
0,232 0,833	93.5-94. 90 -93	5				474.1 457.5	10,000	436.0	3.794	
1.178	89 -92					455.0	6.611 6.090	426.0 420.0	3.097 2.642	
						444.2	4 .7 13	O atom%		
Chikasi	, nige, 1911 and 19	112				469.2 455.8	1230 960	423.0 421.5	459 455	
%	f.t. E	min	tr	. t.		440.3 440.1	641 662	416.5 398.0	403 305	
'			I	11	III			0 atom%		
0	112 _	550	400	160	95.6	471.6 461.6	9.26 7.75	415.1 408.2	$\frac{3.42}{3.00}$	
1 4 5	110 109 108	110	-	155 145	-	451.3 437.8	6.54 5.15	387.0	2.05	
11 7	110 109 - 109	160 42 0	365_290	143	_	440.0		5 atom%	0.407	
10 15	126 109 - 109	360 355	353_280	141	- - -	448.0 429.2	0.740 .518	399.3 375.0	0.296 0.184	
20 30	192 108 225 109	355 350	335 -2 65 335	140 140	-	426.0	,502 2	2.5 atom%		
40 50 60	288 109 300 109	300 250	330 -	-	-	464.1 454.9	0,456 ,385	406.1	0.162 .156	
70 80	322 109 360 109 374 107	225 170 150	-	-	-	434.1 425.5	. 275 . 225	404.1 403.9 390.1	. 153 . 119	
90	403 108 425 90	120 80	-	-	-	120.0	2	0 atom%	•11/	
97	434 - 6-446 -	-	-	-	-	456.1 450.8	$0.120 \\ .122$	$418.0 \\ 405.0$	0,0571 .0444	
99.5 43	7_449 _ 455 _	-	-	-	-	430.5 429.0	.0748 .0709	399.3 39 7. 0	.0400 .0367	
						•	1	5 atom%		
						444.0 440.1	0.0490 .0431	425.5 418.1	0.0216 .0266	
						437.5 435.2	.0416	404.6 394.0	.0131 .00 72 5	
						428.0	. 0289			

Sulfur (S) + Phosphorus (P)	Selenium (Se) + Phosphorus (P)
Helff, 1893 % f.t. % f.t.	Robinson and Scott, 1933
100	1* 2 3 0.0 44.6 44.5 44.2-44.5 15.3 36.39 -4.+6 -4.0-+11 19.4 36.38 -158 -19.0 -3 26.8 30.34 -32 -36.0-16 32.7 27.0 39.0 50 -55 - 36.4 50 -55 - 30.94240 - 44.7 - +26.+30 - 39.71015 - 28.155 - 42.1 - +54 - 26.037 +25 35.059 +150 (3+4) * 1 - after 48 hours heating at 45.50° 2 - after 2 hours heating at 140.150° 3 - after heating 1-6 hours at 160.190°
Boulouch, 1902 and 1906 (fig.) % f.t. m.t. % f.t. m.t	
100 44 - 60 35 - 98 41 27.3 40 64.5 - 96 39 9.8 22.8 88 - 90 29 9.8 15 95 40	Selenium (Se) + Antimony (Sb) Parravano, 1913
Giran, 1906 % f.t. % f.t.	mol% f.t. tr.t. min. E min. 100 630
100 44 39,2 +296 (2+3) 80 -5 32,5 230 E 66,5 -40 E 27.9 272 (2+5) 56,4 +167 (4+3) 25,0 243 E 50,0 +46 E 13,9 314 (1+6)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Selenium (Se) + Tellurium (Te) Pellini and Vio, 1906	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
atom % m.t. f.t. atom % m.t. f.t. 0 217 219 49 331 343. 5 219 225.4 60 - 372.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
5 219 225.4 60 - 372 10 224 236.9 70 - 399 20 247 255.7 84 - 432 30 277.2 287.2 100 - 450	3

Sele	nium (S	Se)+B	3ismuth	(Bi)			Arsenic	(As) +	Phosphor	us (P)		
Parr	avano,	1913					Klemm a	nd Falkov	vski, 1948	(fig.)		
%	f.t.	Е	min.	tr.t.	tr.t2	min.	atom %	f.t.	m.t.	atom %	f.t.	m.t.
100 95 90 85 80 75 73 72,5	420 482 530 562 600	269 271 269 269 268 268	285 255 225 180 120 45	- - - - - 609 613		- - - - -	100 90 80 70 60 50	600 650 665 675 710 740	600 615 635 640 660	40 30 20 10 0	770 795 800 810 815	670 680 690 750
71 69 67.5 67 66 65 63	634 658 678 684 694 702 706	-	-	605 605 605 605 605 605	-	-			+ Antimon			
62.5 60	704 690	-	-	-	610	- 30	%	f.t.	E .	% f.	t.	.E .
57.5 55.5 52.5 50 45 40 30 20 10 0	671 651 635 - - - - -	218 217 217 218 216 217 217 217 217	120 150 200 270 340 460 620 780 900		620 622 618 615 615 618 622 618 618	45 75 105 90 75 60 45	100 94.44 89.87 85.11 83.25 81.79	631 623 617 615 612 613	619 79 613 73 612 63	1.41 61 0.40 61 3.03 62 3.63 62 5.07 63	5 . 3 6 9 6	13 15 19
							Rolla,	1914				
Tellı	ırium (Te) +	Arsenic	(As)			%	f.t.	- 190°	0°	0°-:	25°
Pela	abon, 19	08					0 70.40	615	0.070 .0520	0,0756 0,0541	0.08	13 76
ator	n %		f.t.				83.25 94.44	612 E 623	.0492 .0463	2 .0541 3 .0501	.053 .053	57 22
0 25 40 45 100			452 329 E 362 (34 355 358	+2)			100	-	: 0446		.049	
			f.t.				Arseni	c (As)	+ Tin (Si	n)		
9.9 17.8 28.4	}		440 425 388				Parrava %	ano and D	e Cesaris	1911 (f	ig.)	
							100 95 90 80 70.41 61.94 51.40 (1+6),		(2+3) (1+1) (3+2) +1). (4+3)	228 228 228 228 575 and (3+2)	565	

Hydrogen (H_2) + Ammonia (NH_3)	Hydrogen (H ₂) + Diborane (B ₂ H ₆)
Thomsen, 1911	Hu and Mac Wood, 1956
% n % n	t mol% P
12.5° 100 10.05 31.6 11.04 91.3 10.17 20.9 10.89 79.9 10.42 9.8 10.36 66.1 10.68 0.0 9.15 46.4 11.02	L V -157.67 99.7410 0.06 8.77 160.82 99.7031 .04 10.14 160.73 99.6635 .02 11.45 159.34 99.5565 .02 15.14
Trautz and Heberling, 1931	158.65 99.3818 .02 21.40 159.70 99.3715 .02 21.41 160.50 99.2499 .02 26.61 160.31 99.1306 .02 34.13 -161.08 99.0333 .01 41.98
20° 100° 200° 250° 100 9.82 12.79 16.46 18.13	-149.33 99.7670 0.14 6.74 149.21 99.5158 .08 14.42 149.24 99.3159 .06 19.98 148.92 99.1531 .06 25.58 143.70 99.8820 .06 34.06 -148.93 98.6446 .06 42.12
90.05 10.04 12.99 16.60 18.25 70.87 10.47 13.33 16.80 18.37 51.77 10.80 13.54 16.76 18.23 29.75 10.87 13.29 16.10 17.37 22.39 10.72 12.99 15.60 16.78 10.82 10.11 12.04 14.32 0.00 8.77 10.30 12.11 12.96	-138,22 99.7166 0.24 7.03 136,23 99.4619 .20 13.56 138,03 99.1770 .15 20.59 138,36 98.9243 .16 27.16 138.21 98.6927 .13 33.74 -138.21 98.3871 .12 42.46
Hydrogen (H_2) + Boron trifluoride (BF_3)	-127.25 99.7542 1.66 5.48 127.50 99.5848 1.14 9.13 126.97 99.0693 0.52 20.66 126.61 98.8662 0.47 25.44 126.41 98.5594 0.46 32.44 -127.15 98.1674 0.40 41.91
Raw and Kyle, 1956 t T thermal diffusion*	-114.73 99.8046 7.05 4.04 114.84 99.4894 2.45 9.94 114.36 99.2366 1.77 14.95 115.01 98.9146 1.38 21.23 114.83 98.5459 1.05 28.21 114.81 92.2378 1.00 34.13 -113.90 97.8623 0.85 41.49
23.0 39.0 52.5 63.1 79.2mo1% 120 344.5 0.0816 0.0884 0.0780 0.0646 0.0374 180 368.508260826 200 375.5 0.0857 0.0940 .0836 0.0669 0.0418 250 393.509330939 350 425.3 0.0902 0.1047 .0980 0.0849 0.0557	-103.61 99.5663 7.21 7.79 103.30 99.1573 3.50 14.60 163.28 98.7567 2.81 21.41 103.23 98.2917 2.20 28.74 103.47 97.3861 1.95 35.82 -103.45 97.5473 1.84 41.28
* Thermal diffusion = D_m/\ln (t/T) where D_m is the difference in mole fraction BF_3 , t in C and T in ${}^{\circ}K$	-91.60 99.5100 14.73 8.31 91.42 99.1079 8.63 14.08 91.74 98.6857 5.65 20.12 91.61 98.2339 4.60 26.88 91.61 97.6438 3.90 35.82 -91.43 97.2806 3.70 41.69

Hydrogen (H_2) + Nitric oxide ($N0$)	%	η	Z	η
			17°	
Klemenc and Remi, 1924	100.00 82.15	12.59 12.93	22.86 16.76	13.44 13.04
	50.75	13.50 13.70	0.00	8.88
% n % n	29.63			-
0° 0.00 8.49 45.08 15.95	100.00		45°	14.53
19.75 14.17 70.45 17.20	100.00 80.28 50.75	13.86 14.25	22.86 16.76	14.10
22.99 14.52 85.03 17.50 28.35 14.67 100.00 17.97	50.75	14.75	0.00	9.45
	100.00		70°	15.07
	100.00 80.28	14.98 15.35	29.63 23.06	15.96 15.51
	69.99 61.75	15.57 15.74	16.76 16.76	$\frac{15.05}{15.00}$
Hydrogen ($ m H_2$) + Nitrous oxide ($ m N_20$)	48.23	15.87	0.00	9.94
			92°	
Ibbs and Hirst, 1929	100.00 80.28	15.94 16.33	23.06 16.57	16.40 16.77
% heat cond106 % heat cond106	69.99 61.75	16.48	16.76	16.77 16.73
00	48.23	16.75 16.82	0.00	10.37
100.0 38 40.1 170		1	24°	
92.5 48 18.8 272 79.1 71 0.0 404	100.00	17.39	32.65	18.01
61.4 107	67.60 46,98	17.94 18.14	$\substack{16.36\\0.00}$	$\frac{16.85}{11.02}$
			59°	
	100.00	18.97	16.76	18.03
Hydrogen (H_2) + Sulfur dioxide (SO_2)	67.60 46.98	19.4 2 19.60	$\frac{15.12}{0.00}$	17.48 11.69
nydrogen (ng) - Surran droxide (30g)	32.65	19.42	0.00	11.07
		1	99°	
Trautz and Emert, 1926	100.00 67.60	$\frac{20.71}{21.18}$	$\frac{32.65}{15.12}$	20.98
t p excess pressure (in mm)	49.05	21.21	0.00	19.53 12.37
13.6 756.6 3.30 22.8 742.2 3.93 Dalton's law				
22.8 742.2 3.93 Dalton's law 30.9 748.5 2.67				
	Trautz	and Narath, 192	26	
Trautz and Weizel, 1925	%	n %	η	
% t n % t n	<u> </u>	15°	-1	
	0	8.83 66.7	10.0.	
82.15 17.2 12.95 32.65 158.0 19.37 80.28 70.0 15.35 32.65 199.0 20.98	2 5	8,86 75	10.78	
80.28 92.0 16.35 29.63 19.0 13.83	33.3 50	9.01 100 9.40	12.25	
69.99 65.4 15.36 29.63 70.3 15.99				
69.99 90.2 16.40 23.1 69.6 15.49 67.60 121.5 17.85 23.1 92.7 16.43	· 			
11 67.60 159.0 19.42 23.1 99.7 16.62.1				
67.60 199.0 21.18 22.86 15.1 13.34 61.75 70.0 15.75 22.86 17.2 13.44 61.75 95.0 16.88 22.86 43.0 14.49				
50.75				
N 50.75 51.7 15.03 16.76 47.5 14.19 P				
48.23 65.0 15.66 16.76 158.2 18.00				
48.23 92.6 16.85 16.57 54.5 14.49 46.98 123.0 18.10 16.57 72.5 15.13 46.98 159.0 19.60 15.12 158.5 17.46				
46.98 123.0 18.10 16.57 72.5 15.13 46.98 159.0 19.60 15.12 158.5 17.46 32.65 124.0 18.01 15.12 197.5 19.47				
32.65 124.0 18.01 15.12 197.5 19.47				

Argon (A) + Ammonia (NH_3)

Tsiklis and Vasiliev, 1955 (fig.)

		vo	1%		
L ₁	La	L ₁	La	L ₁	L ₂
100	0	90)0	8	00
52 65 - -	90 65 -	45 50 60	93 74 60 -	35 58	98 88 84 58
	vol%				
L		V			
	70°				
28 33 38 36 20		95 81 78 75 80			
		vol	%	,-,-,	
L ₁	L_2	\mathbf{L}_{1}	La	La	La
8	0°	90)°	10)0°
55 45 33 28 22 15 10 8	55 67 73 77 79 83 87	50 32 21 13 10	50 69 77 83 87	50 24 15	50 75 81 86
		130	00	14	10°
48 29 22 20 15 13	48 66 7 5 79 80 7 9	50 30 21 16	50 70 75 75	- - 45 24 19	- - 45 69 73
	100° 52° 65°	100° 52 90 65 65 Vo1% L 70° 28 33 38 36 20 L L L 80° 55 45 67 33 73 28 77 22 79 15 8 8 115° 48 48 48 29 66 22 75 20 79 15 80	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	100° 90° 52 90 45 93 65 65 50 74 60 60	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Argon (A) + Boron fluoride (BF_{α})

Booth and Wilson, 1935

dew point	P	dew point
90 mo	1 %	
-51.6 -44.4 -35.6 -31.7 -30.4 -25.6 -24.0 -22.5 -22.5 -19.5	50.4 50.5 54.5 54.7 55.0 58.0 58.2 59.3 60.6	-17.9 -16.9 -15.1 -18.9 -16.2 -16.6 -13.9 -18.9 -20.0
79.5 m	o1 %	ļ
-55.2 -45.8 -42.4 -36.6 -35.4 -34.6 -33.1 -30.8 -28.3 -25.7 -24.4 -23.0 -21.9 -20.6	59.7 63.4 67.1 68.8 70.2 75.3 76.9 80.8 82.4 87.2 87.6 91.6 95.0	-20.5 -20.0 -20.0 -20.5 -21.8 -21.8 -25.2 -25.8 -28.7 -30.8 -34.3 -34.3 -37.3 -46.0
70 mo	1 %	
-54.9 -51.7 -45.8 -38.6 -34.6 -33.5 -31.9 -33.1 -29.5 -28.5 -28.5 -26.7 -25.1	63.8 67.4 71.6 73.6 77.2 80.3 85.4 89.5 91.6 93.0 101.8 107.6 108.3 109.0	-24.0 -23.5 -23.4 -23.8 -25.0 -28.7 -31.4 -35.7 -38.0 -38.8 -46.0 -56.6 -61.2 -66.0
60 mol	1 %	
-59.6 -56.6 -52.8 -48.7 -44.4 -44.3 -41.5 -38.0 -32.3	70.8 80.9 91.0 94.3 98.5 101.6 103.8 105.8 107.2 107.9	-31.3 -32.0 -37.7 -41.6 -46.0 -50.5 -55.2 -59.8 -64.3 -72.3
	90 mo -51.6 -44.4 -35.6 -31.7 -30.4 -25.6 -24.0 -22.5 -29.5 -19.5 79.5 m -55.2 -45.8 -42.4 -36.6 -33.1 -30.8 -28.3 -25.7 -24.4 -23.0 -21.9 -20.6 70 mo -54.9 -51.7 -45.8 -34.6 -33.5 -31.9 -33.1 -29.5 -28.5 -28.3 -26.7 -25.1 -24.4 -44.4 -44.3 -41.5 -38.0	90 mol \$\frac{\pi}{-34.4}\$ -51.6

	FO 3 1 d		
20.8 -64. 27.1 -58.	7 53.2	-48.6 -45.9 -44.2	Krypton (Kr) + Hydrochloric acid (HCl)
34.9 -53. 39.8 -50. 45.6 -48.	6 70.1	-43.0 -42.9	Glockler, Fuller and Roe, 1933
	40.1 mo1 %		P PV _ P*
16.3 -70. 17.4 -67.	3 49.4	-50.0 -49.0	0% 26.3mo1% 49.2mo1% 72.9mo1% 100%
19.1 -64. 23.2 -61.	4 55.2 2 60.0	-48.4 -47.7	95.5° 0 1.350 1.350 1.350 1.350 1.350
28.7 -59. 30.8 -57. 42.1 -53.	9 70.7	-46.3 -45.5 -44.6	20 328 328 325 301 286 40 305 310 295 249 207 60 283 277 248 189 112
42.8 -51.	4 90.7	-46.9 -48.7	80 .261 .243 .203 .123 .006 100 .239 .217 .167 .066 0.902
43.0 -50. 46.7 -49.	5		55.5° 0 1.203 1.203 1.203 1.203 1.203
20.4 -115	10 mol % 58.4	-93.7	20 .170 .184 .164 .144 1.112 40 .137 .144 .115 .073 0.917
40.5 -94. 48.9 -94.	2 59.8	-92.8 -92.8	80 .072 .054 0.995 .881 .626
50.5 -95. 50.5 -94. 50.5 -92.	0 63.3	-96.7 -95.7 -93.5	100 .038 .018 0.935 .780 _ * PV - P = 1 at P = 0 and t = 0
54.2 -92. 54.5 -94. 58.4 -95.	8 68.5 2 70.0	-95.4 -93.5 -105.0	Retrograde condensation
crit. const.	3 77.3	103.0	mol% t P
% P	t		96.2 47.0-47.5 84.0-85.2
100 49.3	-11.8		87.9 38.5-39.6 87.0-90.0 75.2 23.0-28.0 88.0-95.4 63.4 8.0-16.0 87.0-96.0
0 47.7	-120.6		48.9 -10.01.2 83.5-92.7
Rooth and Wilson,	1935		Wiberg and Karbe, 1949
mol% f.t.	mol% f.t.		mol% f.t.(L_2) mol% f.t.(L_2)
99.0 -130.6 98.7 131.0	78.7 -128.5 77.1 128.6		32 -130 41 -127 36 -128 72 -127
98.0 131.2 97.5 130.9	75.0 128.4 74.0 128.2 72.0 127.9		37 -129 77 -128 38 -129 100 -128
97.0 130.4 95.0 129.2	72.0 127.9 70.0 131.6 68.6 128.3		
93.5 130.2 92.5 130.3 91.5 131.5	66.7 127.3 64.2 129.3	3	
89.1 128.4 87.5 128.8	63.1 129.9 60.1 131.7		Xenon (Xe) + Boron fluoride (BF ₃)
86.5 128.8 85.0 128.3 83.0 128.3	59.9 133.3 57.1 129.1 53.9 128.8		Wiberg and Karbe, 1949
81.5 129.3 81.5 129.0	50.0 128.6 42.8 128.4		mol% f.t. mol% f.t.
80.1 129.6 79.8 -129.9	40.6 -131.2		L ₁ L ₂ L ₁ L ₂
(1+1) (1+2) (1+3)	(1+6) (1+8) (1+16	5)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
			55 113.8 -129.2 85 -114.5 -130.8 69 -113.8 -129.0 100128.2
		:	
		:	

Chlori	ne (Cl) + Nitrog	en dioxide	(NO ₂)	Chlorine (Cl_2) + Sulfurdioxide (SO_2)
Mikhal	eva and Epsteim,19	51		Lecat, 1949
t	p t	р		% b.t.
-8.75 -2.50 +1.25	98.07 mo1% 219.0 +13.5 295.0 16.0 352.0 18.0	618.0 706.0		0 -33.6 11 -34.7 Az 100 -9.7
1,23	352.0 18.0 92.65 mol%	784.0		
-14.0 -6.0 +0.75	336.5 465.0 609.5 +6.5	667.5 775.5		Smits and de Mooy, 1910-11 (fig.)
10.0	91.40 mol%	5 00.0		mol% f.t. mol% f.t.
-10.0 -4.0 0	448.0 +2.25 554.0 +3.25 645.0 +4.25 90.50 mo1%	726,5		0 -100.45 50 -87 1.5 102.3 E 60 86 10 93.5 70 84.5
-16.5 -8.5 -2.25	384.5 521.0 644.0 +2.5	671.5 697.5 775.5		20 88.5 80 82.5 30 88.0 90 80.5 40 -87.5 100 -75.6
-13.5 -5.5	87.50 mo1% 534.0	775.0 793.0		van der Goot, 1911 and 1913
-16.25 -10.75	599.5 -9.5 750.0	804.5		mol% f.t. E mol% f.t. E
-25.5 -23.5	65.0 mol% 654.0 -22.75 700.5 -20.25 63.60 mol	719.5 782.0		0 -100.9 - 32.4 -88.1 -102.2 0.7 101.1 -101.8 38.1 87.9 102.6 4.7 100.5 - 54.6 86.7 102.6 5.7 99.3 102.3 70.9 84.7 -103.5 9.6 95.3 102.2 83.6 82.7
-29.25 -25.0	594.0 -23.5 688.0 -22.2 57.25 mol	5 761.5		24.1 89.4 102.3 91.4 79.7 - 29.3 -88.6 -102.4 100.0 -75.2 - mol% f.t. E mol% f.t. E
-35 -33 ,2 5	571.0 -29.7 614.0 -27.0 27.50 mol	785.0		100.0 -75.1 - 50.0 -54.1 -
-40.75 -35.75	481.0 -31.2 603.0 -29.0	5 721.0		84.5 81.5 -84.5 45.8 61.4 75.2 83.7 - 39.0 74.2 -108.9 67.4 76.4 - 30.6 87.7 -109.2 65.2 74.3 - 23.4 100.4 109.1
b.t.	mo1% L V	b.t.	mol% L V	60.7 69.5 -84.3 13.0 107.5 -107.1 56.4 64.4 -84.9 10.6 105.1 -109.1 51.8 57.4 - 3.2 102.1 -109.4 50.0 -54.1 - 0.0 -100.9
+17.0 +7.5 _3.75	93.3 47.4	-13.25 -27.75 -32.25	77.6 15.9 37.6 5.0 16.8 1.5	$E_1 : 77.8 \text{ mol}\%$ $E_2 : 18.5 \text{ mol}\%$ $(1+1)$ $S0_2C1_2 + S0_2$ $S0_2C1_2 + C1_2$
mo1%	b.t. dew point	mo1%	h.t. dew p.	% f.t.* E % f.t.* E
100 80 60	+22 +22 -11 +13 -22 +8	40 20 0	-28 +5 -33 -10 -35 -35	0.0 -100.9 - 51.9 -57.8 - 15.3 -107.5 -109.5 59.3 -68.4 - 46.5 -60.5 - 70.2 -80.0 -84.5 43.9 .56.2 - 100.0 -75.1 -
				* in presence of a catalyst. (1+1)

	
l l	
Chlorine (Cl) + Nitrosyl chloride (NOCl)	Boubnoff and Guye, 1911
Childrine (Ci) v hittosyl children (hob.)	% f.t. % f.t.
Epstein and Mikhaleva, 1951 (fig.)	0.00 -94.4 48.41 -104.2
b.t. mol% b.t. mol%	5.36 95.5 54.55 100.1 12.80 97.0 61.33 95.5 16.15 97.5 63.15 92.5
L V L V	16.15 97.5 63.15 92.5 22.03 100.3 66.28 91.6
	1 27.78 103.3 72.73 85.1
-5.5 100 100 -16.5 69.20 41.95 -8.5 92.75 84.80 -22.0 52.00 28.80	32.08 105.6 76.79 80.8 36.21 106.5 78.21 80.4
$\parallel -12.0 \qquad 82.60 \qquad 67.00 \qquad -30.75 \qquad 22.20 \qquad 8.70 \parallel$	37,60 107,7 83,03 77,7
-14.75 74.60 52.29 -35.0 0.0 0.0	40.54 107.4 87.20 74.1 43.50 107.0 89.65 73.0
	43,50 107,0 89,65 73,0 44,36 _107,4 100,00 _64,5
t p t p	
90.25 mo1%	
_50.72 94.0 -17.0 531.0	
_40.5 168.5 _11.75 670.0 _31.5 278.0 _9.5 749.0	Chlorine (Cl) + Phosphorus oxychloride
84.0 mol%	(POC1 ₃)
49 75 116 5 -17.25 582.0	
-41.5 175.0 -11.5 750.0 -32.75 287.0	Rollet and Greff, 1933
78.25 mol%	% f.t. % f.t.
-49.0 137.0 -23.25 496.0	0 -103 56.7 -55
_39.0 231.0 _13.50 752.0	18 -107.2 E 80 -20 40 -72.0 100 +1.15
75.60 mol% _51.5 129.0 -23.25 542.0	(1+1)
_40.75	(2) 2/
_32,5 349,0	
60.50 mol%	
_54,25	
_40.0 307.5 _18.5 770.0	Chlorine (C1) + Ammonium bromide (BrH ₄ N)
_34 , 5	
51.90 mol%	Ephraim, 1917
-45.5 265.0 -24.25 678.0 -33.7 455.0 -22.0 760.0	t p dissoc. t p dissoc.
42.0 mol%	
_50,5 237,0 _30,25 601,0	(2+1)
_35,0 485,5 _23,7 5 788,0	18.5 70 48.5 445 30.0 145 54.0 608
29.80 mo1%	30.0 145 54.0 608 41.5 310 55.8 680
-47.75 316.0 -29.75 710.0 -39.25 472.0 -27.5 790.0	
-34.25 582.0	
19.25 mo1%	Chlorine (Cl) + Arsenic trichloride (AsCl ₃)
-57.5 205.0 -37.25 563.5	onforthe (of) - Mischie trienteride (MSel3)
-45.75 384.0 -29.5 806.0 -40.5 494.0	
}	Biltz and Meinecke, 1923
mol% b.t. dew point	mol% f.t. E mol% f.t. E
100 _5 _5	100 -16.0 - 56.6 -43 -108
80 _9 _13	93.8 20.5 49.9 50 - 89.0 22.5 -108 48.5 50 107
60 -13 -20 40 -19 -27	77.7 29.0 107 37.7 58 106
20 _26 _32	69.6 34.5 107 34.7 59 106 67.5 35.5 109 23.3 74 105
0 _35 _35	63.3 40.0 - 17.0 84 106
	62.0 40.0 108 10.4 96 108 56.8 -42.5 -108 6.3 -107 -108
\ \	20,0 -12,0 -100 0,0 -107 -100

Chlori	ne (Cl) + Boron	trichlori	de (Cl _s	В)						
006	1000					Fiscl t	er, Ste	unenberg %	and Vog	el, 1954 mol%	
Graff,	1933						L_1	La		\mathbf{L}_{1}	La
	%	f.t		E		0.0	86.1	1.6	42.2	72.9	
	0 4.3 11.4 12.4 21.9 25.8 33.1 37.8 38.0	-103 -104 -106 -108 -109 -111 -114 -117	.2 .3 .2 .3 .0 .5 .3 .5	-136.6 -135.6 -136.4 -135.6		9.0 16.1 25.0 28.7 31.0 35.3 39.4 39.7 41.3	83.8 82.3 79.4 77.8 75.1	4.6 5.2 7.1 8.6 8.9 10.0	45.8 47.6 49.1 49.5 50.2 50.8 53.9	72.9 70.8 67.8 66.4 65.8 64.4 53.2	15.2 17.2 17.7 17.3 20.0
l	42.2 46.0	-118. -1 2 1.	.4 -	135,3		mol%	sa	t.t.	mo1%	sat.t	
	49.8 56.4 57.7 62.2 63.7	-124. -129. -129. -133. -134.	.5 - .7 - .5 -	-135.6 -135.3 -135.6 -135.3 -135.7		60.4 51.6 44.4	5	1.8 4.5 4.8	44.3 28.9 23.1	54.9 54.7 52.8	
	66.0 68.8	-135, -133,	.0 -	135.3 135.1		mo1%	f	. t.	m.t.	E	· · · · · · · · · · · · · · · · · · ·
	69.3 71.9 83.8 86.9 95.4 100.0 E = -1	-132 -130, -120, -118, -111, -108.	.8 - 5 - 3 6	135.1 135.6 135.0		100.00 97.44 94.64 90.20 86.11 80.11 60.30 45.92 30.44	2 7 4 6 0 5 2 3 3 3 9 3 2 3 8	.7 .4 .3 .0 .8 .6 .7 .8	8.6 3.4 3.6 3.6 3.6 3.5	-8.8 -8.6 -9.0 -9.0 -9.1 -9.0 -8.8 -8.7	
) + Bromin gle and Vog		ride (E	BrF ₃)	2.38 0.80 0.00	D -7	.7 .9 .1	-	-8.8 -8.6	
mol L	% V	p	mol L	% V	p		. (D	N . 7-42		alamida (rc1 \
	'	75.0			 }	Bromi	ne (Br) + 1001	ne trici	nloride (ICI ₃)
97.7 98.5 98.5 98.1 94.5 96.1 95.9 90.0	100.0 77.4 60.3 - 49.5 - - 32.9 27.1 24.1 100.0 63.9 36.1 25.6 23.1	75.0 111 202 309 514 514 517 554 932 932 963 1287 1509 100.0 309 789 1763 1763 1763 12956 3849	73.1 66.7 38.3 28.3 9.5 6.4 - 1.5 0.0	20.6 18.6 19.0 16.9 14.6 13.3 10.4 8.7 8.7 8.4 2.5 0.0	1671 1727 1808 1802 1817 1799 1723 1695 1630 1561 1330 1250 3888 3757 3247 2483	Plotn 8 9,8 20,14 27,1 29,2 8 18.8 20.5 21.5 21.8 22.35 23.3			3.0770 3.0327 2.9749 2.9433 2.9348	724 970 12 22	
						24.7	542	01.4	2.	14	

Bromin	e (Br ₂)	+ Phospho	rus tric	nloride (PCl ₃)	Brom	ine (Br)	+ Phosphori	us pentachlori	de (PC1 ₅)
Fialko	v and Ku	ızmenko, 19	51 and 1	952		Plots	nikov and	Jakubson, 19	928 (fig.)	
mol %	f.t.	Е	mol %	f.t.	E	%	f.t.	%	f.t.	
2.15 3.57 5.48	- 7.0	-7.8 -7.8 -8.2 -8.4 E	18.58 19.40 19.72 19.87	22.2 18.5	15.6	5 10 15	4 5.5 14	20 25 22	24 23.5 25	
$\frac{8.41}{9.13}$	+ 9.0 +17.0	-	20.21 20.72 21.84	16.2 15.5	15.2 - E 15.2	8	н	%	и	
9.54 10.04 10.84 13.48 15.18 15.71 16.82 17.27 17.91	23.4 24.5 23.6 23.0 - 23.5 23.2	(9+1) 	21,84 22,78 23,04 23,61 24,38 25,60 28,62 31,70 32,87	17.5 18.7 20.0 23.5 26.2 34.5 36.5 37.7	15.1 14.2 (2+1)	0.6 0.9 1.3 2.6 3.7 4.9 5.6	0.055 68.6 88.6 113 115 159 184.5	9.9 11.9 12.2 14.0 14.8 15.3 16.1	443 474 513 548 548 571 577	
mol %		f.t.	mol 🖇	f.	t.	5.6 5.65 7.2 8.2	183 291	17.45 17.6	567 567	
34.81 35.93 38.90 49.24		37.3 L ₁ +L 36.9 37.3 36.9	69.13 76.48	36	i.6 i.5 i.8	8.2 8.45 9.7	311 325 417	18.4 18.5 20.1	552 502 488	
mo1%		d	mo1%	d						
	25°	40°		25°	40°	Bromi	ne (Br)	+ Phosphoru	s pentabromide	(PBr ₅)
0 1.31 6.24 10.45 12.21 14.31 17.07	3.11; .12; .13; .14; .14; .12;	5 - 8 - 2 3.123 5 .112 8 .096	20.03 23.49 24.71 27.22 28.92 33.33	3.032 2.961 .921 .846 .850 .874	2.997 2.924 2.809 .815 .839	Plotn %	ikov, 1903 ^и	and 1904 \$	к	
mo1%	25°	η 40°	mo1%	η 25°	40°	3.31 3.4 4.26	.0091	21.1 23.0 23.3	501 516 534	
0 1.31 6.24 10.45 12.21 14.31 17.07	1305 1439 2345 3458 5882 8491 12722	3269 4147 5608 7508	20.03 23.49 24.71 27.22 28.92 33.33	13061 13015 12624 11058 11014 11734	7719 7580 6329 6371 6793	4.91 5.48 13.8 13.9 14.3 15.4 16.4 18.8	.0109 .0119 257 sic 253 287 330 366 430	24,6 28,5 29,2 30,1 31,3 34,3 36,0	553 567 569 584 593 558 534	
mo1%		н	mo1%	н		м	mol. co	nd. M	mol. cond.	
	25°	30°		2 5°	30°			18°		
0 1.43 3.79 4.40 6.33 8.66 9.84 9.90	0 0 268 341 418 478 781 790 801	0 0 522 	19.00 20.03 22.17 29.90 31.52 33.60 41.92 50.12 54.40	635 625 572 512 512 518 543 553 560	700 - - 642 - -	2.38 2.18 2.04 1.60 1.47 1.14 1.07	27 28 32 34 32	0,995 .971 .407 .382 .341 .297 .230	29 26 0.0029 0.0031 0.0032 0.0034 0.0038	
11.35 12.90 14.23 16.68	798 761 741 685	<u>-</u>	56.58 65.57 68.62 100.00	561 561 561 0	662 662 662 0					

Bromine (Br) + Antimony trichloride (SbCl ₃)	Bromine (Br) + Nitric dioxide (NO ₂)
Plotnikov and Kudra , 1930	Perret and Perrot, 1935
% d % d	% f.t. % f.t.
25° 17.07 3.041 39.97 2.960 27.38 3.003 45.03 2.939 35.88 2.974 52.83 2.911	0 -7.2 60 -14.0 10 -12.5 72 -16.6 20 -12.5 80 -15.2 30 -12.5 90 -13.3 40 -12.5 100 -14.2
25°	
12.27 0.0024 61.63 0.263 21.98 .026 65.63 .370 23.68 .027 66.39 .347 27.00 .034 69.69 .420 28.49 .041 74.12 .585 34.77 .067 79.86 .712	Bromine (Br) + Sulfur dioxide (SO ₂)
39.97 .092 83.77 .872	van der Goot, 1911 and 1913
43,57 .099 87.20 1.010 45.03 .101 91.16 .280	mol% f.t. E mol% f.t. E
46.97 .115 96.11 .335 52.83 .171 97.00 .340 54.77 .191 98.07 .300 55.38 .173(?) 98.55 .320 58.58 .215 100.00 0.041	0 -7.1 - 73.1 -15.8 -75.6 3.3 -8.8 - 84.3 -21.7 -75.6 9.3 -10.4 - 90.5 -28.7 -75.5 23.5 -13.3 -75.3 95.6 -45.0 -75.5 30.6 -13.8 -75.5 97.5 -58.0 -75.5 36.5 -13.9 -75.5 99.3 -75.3 -75.6 46.2 -14.0 -75.5 100.0 -75.1 -61.3 -14.3 -75.5
	E:1 _75.5° 1 mol%
Bromine (Br ₂) + Nitric oxide (NO)	
Roozeboom, 1885	Bromine (Br) + Ammonium bromide (BrH ₄ N)
84.19%	Ephraim, 1917
_10 601 _4 729 _9 617 _3 760	t p dissoc. t p dissoc.
_8 631 -2 791 _5 698 0 889	(2+1)
mol % p	17 20 74.2 300 49.5 105 84.2 475 60.4 159 92.3 670
0°	see also the system : Ammonia + Ammonium bromide
50 889	
52.5 700 56 631 60 545 63 491 70 401	Bromine (Br) + Ammonium iodide (H_{t_k} IN)
	Ephraim, 1917
	t p dissoc. t p dissoc.
	(2+1) 107 65 144.5 313 124.5 138 154 465 134 204 161 640

Iodine (I2)	+ Phospho	rus trich	loride	(PC1 ₃)	Iodine (I ₂)	+ Phosphorus	pentabromid	e (PBr ₅)
Fialkov and	Kuzmenko,	1949			Kuzmenko and	Fialkov, 194	0	
mol% f	.t.	mol%	f.t.		mol %	f.t.	E	
3.8 11 12.1 10	1.5	33.0 37.6 58.8	102.3 102.1 102.1		0 4.5 7.1 10.6 14.2	113.2 103.8 99.0 93.0 87.0	- - - - -	
mo1% ×	1	mo1%	н		14.9	85.0 81.5	_	
∥ 8.1 .4	130° 20 56 43 22	24.1 29.2 34.2	0.13 .12 .13		20.1 22.1 26.2 26.3 28.1 28.6 30.4 33.2	79.5 71.0 70.9 66.5 65.5 63.0 56.0	13.5 13.0 12.5 13.0	
Iodine (I ₂) Fialkov and I			chloride	(PCl ₅)	36.3 37.6 40.5 41.2 45.0 49.3 50.4	48.0 38.5 32.0 28.2 20.2	13.0 13.0 12.5 11.5 13.0 13.5 13.5	
mol% f.t.		mo1%	f,t,	E	52 1	$\frac{17.5}{39.0}$	13.5 13.0	
0 113. 10.1 105. 18.1 97. 28.4 82. 31.8 80. 33.9 80. 36.4 90. 39.5 92. 44.5 101.	2 - 5 79.5 79.0 79.8 2 - 79.5	47.8 50.4 52.2 52.9 53.1 57.5 65.3 70.0 74.0	106.5 112.5 116.5 118.2 122.0 136.0 163.0 187.0 198.0	78.0 79.0 79.3 79.5 79.5	57.9 65.7 69.1 72.4 74.7 75.8 78.2 80.2 84.3 89.0 90.0 100.0	94.0 105.0 107.0 109.5 110.1 108.2 110.0 108.0 110.5 109.4 103.7	13.5 13.5 - - - 79.0 79.2	
		mol%	ж —————		mol %	đ	mol %	d
0 0 4.2 35 7.4 111 14.2 252 26.3 340 29.0 360 32.8 410	.0 .0 .0	38.1 38.4 40.6 42.9 48.7 50.7 57.0	400.0 410.0 400.0 390.0 400.0 390.0 400.0		0 1.93 8.51 17.30 22.20 26.90 32.80	130° 3.91 3.83 3.72 3.56 3.46 3.43 3.36	51.70 57.80 59.20 64.90 66.22 71.05	3.22 3.19 3.18 3.17 3.15 3.10
T-14 (T)	Di			Dro	mol %	н	mol %	ж
Iodine (I ₂)	, + rnosp h o	orus tribi	romide (гвг ₃)		130°		
Fialkov and	Kuzmenko,	1949			0 5.4 7.1	0.41 0.76 0.85	28.3 31.7 41.3	22.0 280.0
mo1% 1	f.t.	mo1%	f.t.		8.8 11.1	1.30	50.3 60.0	340.0 340.0 320.0
21.3 30.0 37.1	13.2 03.7 07.2 03.5 88.8 85.5	67.9 73.3 77.8 81.7 84.6 86.7	65.4 58.7 52.2 45.0 36.5 30.0		12.8 14.2 20.4 21.9 24.7	5.10 8.60 7.60 10.00 13.00	72.5 81.4 82.3 83.5 85.5	320.0 320.0 320.0 170.0 23.0
50.0 57.2	80.6 74.7 68.4	88.7 90.8 96.2	26.0 17.5 _5.0				4	

Oxygen (0_2) + Nitrous oxide (N_20)

Fuchs, 1918

vo1%	Dv	vol%	Dv
	19.5°	716 mm	
0 10 20 30 40 50	0 +0.96 1.78 2.51 2.88 3.03	60 70 80 90 100	2.70 2.11 1.43 0.85

Oxygen (0_2) + Sulfur dioxide ($S0_2$)

Trautz and Emert, 1926

t	р	excess	pressure	(in	mm)
	745.0 748.2 749.0	2.62 2.30 2.09					

Dean and Walls, 1947

 -33.2° : 0.16cc 0 gaseous (at 0° and P_1 = 1) in 1gr. SO_2

0xygen (0₂) + Hydrogen sulfide (H₂S)

Baccei, 1899

Absorption spectrum for different lines.

Oxygen (0_2) + Ammonia (NH_3)

Trautz and Heberling, 1931

%		η		
	20°	100°	200°	
0	20.23	24.40	29.02	
13.51	19.24	23,26	27,7 3	
29.86	17.83	21.70	26.04	
47.86	16.04	19.72	23,90	
70.79	13.50	16.89	20.85	
87.55	11.43	14.59	18.40	
100.00	9.82	12.79	16.46	

Sulfur (S) + Ammonia (NH_3)

Ruff and Hecht, 1911

%	f.t.	m,t,	E	
100	-77.3	-77.9		
96.99	77.4	78.2		
92,60	78.3	80.0	-80.0	
90	78.7	80.3	80.0	
87,84	78.9	81.3	80.0	
83.7 3	79. 6	81.3	80.0	
83.01	79.1	81.8	80.0	
80.49	78.5	81.7	80.0	
78.22	78.4	81.8	80.1	
75.82 71.16	$\substack{\textbf{78.3}\\80.3}$	81.7 83.1	80.0	
67.23	82.2	84. 3	-	
61.15	84.6	-84.6	-84.6	
sat.sol.	-84.6		~ ~	
	. • -			

Sulfur (S) + Tin tetraiodide (SnI4)

Ephraim, 1908

%	f.t.	%	f.t.	min.(E)
100	138.2	91.08	125.1	3
97.03	133.3	88.76	115.4	4
95.20	131.8	84.92	103.2	5.5
93.35	128.2	81.56	93.7 E	7

Dorfman and Hildebrand, 1927

mo1%	wt%	f.t.	····
100 47.6	100 80,2	143.4 130	
43.2	56.7	104	

Sulfur (S)	+ Vanadium oxyt	richloride	(V0Cl ₃)	Nitr	ogen (N ₂)	+ Nitrous	oxide (N	i ₂ 0)	
Brown and Sny	yder, 19 2 5			Fuch	s, 1918				
8	f.t.		·	vol %	Dv v	ol % Dv	vol	% Dv	
					19	,5° and 7	16 mm		
96.80 94.34	0 20			0	0	40 3.1	6 80		
88.42	45 65			10 20	1.07 2.14	50 3.0 60 2.8			
76.48	03			30	2.86	70 2.3	4		
Nitrogen (N ₂ Wiebe and Gad	,) + Ammonia (N	H ₃)			rogen (N ₂)		oxide (No))	
				Irau	itz and Gabr	1e1, 1931			
P 0°	a* 50° 7 5°	90°	1000				η (vap	our)	
	30° 75°		100°	t	vo1% 100	69.48	58.37	26.74	0
50 100 7.90 200 13.73 300	6,63 17,19 36,24 21,38 55,48	-	20.50 86.32 193.16	20 100	18.82 22.72		18.27 22.09	17.78 21.32	17.47 20.84
325 350		165.50	235.95	N.B. S	see also the	system :			
400 20,76 500 -	65.30 120.66	310,63	~		0xygen +	Nitrogen			
550 _		430,8	-						
600 24.95 700 -	84.78 177.95	-	~						
800 28.06 1000 29.69	97.20 218.99 104.59 241.75	-	-	Nitr	ogen (N ₂)	+ Sulfur	dioxide (S0 ₂)	
* a = cc N in	1 gr. NH ₃			j					
				Dean	and Walls,	1947			
				t	mo1%	P ₁	Pa	P	a*
Trautz and He	eberling, 1931					<u> </u>			
8	η (vaj			28.3	98.61 15.	4 29.6	5.4	35.0	5.0
200	100° 200	0 250		28.3 -20.0	98,61 15, 99,49 30, 99,45 4	$\begin{array}{ccc} 7 & 10.6 \\ 2 & 16.5 \end{array}$	0.75	15.3 17.2	1.9
0 17.45	20.85 24.	62 26.	27	-33.2 -33.2	99.22	.1 34.6 .8 17.4	U.4.	L 35,0	2.8 1.2
0 17.45 11.11 16.90 29.20 15.85	20.85 24. 20.31 24. 19.20 22. 17.10 20. 15.69 19.	62 26.3 08 25.3 96 24.4	72	-33.2	-	1.0	-	1.0	0.0
1 56.38 13.83	17. 10 20.	.85 22.3	50	* a =	cc N (at 0	and P, =	1) in 1	gr. SO ₂	
71.47 12.54 88.83 10.92	13.98 17.	68 19.	39						
100.00 9.82	12.79 16.	46 18.	13						
N.B. See also	the system :			Tran	te and Eman	- 1024			
1	ogen + Nitrogen				tz and Emer				
				t	p	excess pr	essure (in mm)	
				13.6 22.8 30.9	747 .2 752.0 749.7	2.6 2.2 2.0	9		

P Kg		fluoric act and Staub, f.t. 124.6 123 110 100 65 19 28 19 24 31 16 25 32	1933 (fr E 19 19 19 19 19 19 19 19	tr.t. - (2 -3 -3 -3 -3 -3 -3 (3+1	2+1)
5000	29.8 29.27 26.24 22.5 22.1 20.17.7 16.6 14.12.3	f.t. 124.6 123 110 100 65 19 28 19 24 31 16	E 19 19 19 19 19 19 19	tr.t. - (2 -3 -3 -3 -3 -3 -3 (3+1	
6000 7000 35.0 76.0 40° 6000 45.0 61.0 7000 36.5 65.0 8000 33.0 68.0 9000 31.5 69.0 P Kg V1 L2 25° 1000 2.5 90.0 3000 7.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 7000 28.0 80.0 35° 1000 6.0 92.5 90.0 7000 35° 1000 30.5 78.0 7000 35° 1000 35° 1000 35° 1000 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 40° 1000 12.0 89.0	29.8 29.27 26.24 22.5 22.1 20.17.7 16.6 14.12.3	f.t. 124.6 123 110 100 65 19 28 19 24 31 16	E 19 19 19 19 19 19 19	tr.t. - (2 -3 -3 -3 -3 -3 -3 (3+1	
7000 32.0 76.0 40° 6000 45.0 61.0 7000 36.5 65.0 8000 33.0 68.0 9000 31.5 69.0 P Kg Vol % V1 L2 25° 1000 2.5 95.0 2000 2.5 90.0 3000 7.0 86.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 11.0 63.0 40° 1000 12.0 89.0	29.8 29 27 26 24 22.5 22 21 20 17.7 16.6 14	124.6 123 110 100 65 19 28 19 24 31	19 19 19 19 19 19 19	- (2 -3 -3 -3 -3 -3 (3+1	
6000 45.0 61.0 7000 36.5 65.0 8000 33.0 68.0 9000 31.5 69.0 P Kg Vol \$ V1 L2 25° 1000 2.5 95.0 2000 2.5 90.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 11.0 63.0 40° 1000 12.0 89.0	29.8 29 27 26 24 22.5 22 21 20 17.7 16.6 14	124.6 123 110 100 65 19 28 19 24 31	19 19 19 19 19 19 19	- (2 -3 -3 -3 -3 -3 (3+1	
8000 33.0 68.0 9000 31.5 69.0 P Kg Vol % V	29 27 26 24 22.5 22 21 20 17.7 16.6 14 12.3	123 110 100 65 19 28 19 24 31	19 19 19 19 19 19 19	-3 -3 -3 -3 -3 (3+1	
8000 33.0 68.0 9000 31.5 69.0 P Kg Vol % V	26 24 22.5 22 21 20 17.7 16.6 14 12.3	110 100 65 19 28 19 24 31	19 19 19 19 19 19 19	-3 -3 -3 (3+1	
P Kg Vol % V1 L2 25° 1000 2.5 95.0 2000 2.5 90.0 3000 7.0 86.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 11.0 63.0 40° 1000 12.0 89.0	26 24 22.5 22 21 20 17.7 16.6 14 12.3	100 65 19 28 19 24 31	19 19 19 19 19	-3 -3 -3 (3+1	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	22.5 22 21 20 17.7 16.6 14 12.3	19 28 19 24 31 16	19 19 19 19 19	-3 -3 (3+1	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	21 20 17.7 16.6 14 12.3	19 24 31 16	19 19 19	−ર્વે (ગ્ર+1	
25° 1000	20 17.7 16.6 14 12.3	16	19	- 3	
1000 2.5 95.0 2000 2.5 90.0 3000 7.0 86.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 11.0 63.0 40° 1000 12.0 89.0	16.6 14 12.3	16	19	-3 -3 (4+1	
2000 2.5 90.0 3000 7.0 86.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	14 12.3	25	16	~3 (4+1 ~3	L)
3000 7.0 86.0 4000 30.0 81.5 5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 38° 1000 9.0 91.5 2000 12.0 80.5 3000 11.0 63.0			16 16	-3 -3 3 (6+1	
5000 34.5 78.0 6000 30.5 78.0 7000 28.0 80.0 30.5 78.0 30.5 78.0 80.0 35° 1000 6.0 92.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0		16	16 16	~3 (6+1 ~3	1)
7000 28,0 80,0 35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	1				
35° 1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	H				
1000 6.0 92.5 2000 5.5 85.0 3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0					
3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	" dro		ur)	Antimo:	··· nontaflu
3000 11.0 69.0 3800 27.5 47.5 38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	11		:10 (nr ,	+ Antimoi	ny pentaflu
38° 1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	riae	(SbF ₅)			
1000 9.0 91.5 2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0	Stair.	1 Cahar	1051		
2000 12.0 80.5 3000 21.0 63.0 40° 1000 12.0 89.0		and Schur			
40° 1000 12.0 89.0	- %	đ	8	đ	
1000 12.0 89.0		15.5	50		
1000 14.0 07.0	100.00	3.142	37.40	1.341	
1500 15.5 81.5	85.00	2.568 2.118	$\begin{array}{c} 25.16 \\ 0.00 \end{array}$	1.172 0.981	
2000 23.0 74.0 2400 37.5 62.5	71.60 55.59	1.687	0.00	0.701	
2400 07.0 02.0		wt%		mo1%	
	I	L	v	L	V
	142.7	100	100	100	100
	127.7 121.3		97 8		80.4
	121.3 120.1	99 . 1	95.8 95.5	$\frac{91.0}{92.9}$	67.8 66.2
	114.6	99.1 99.3 98.5 98.6 98.5	95.8 95.5 94.2 91.2	92.9 85.8 86.7 85.8 78.3 74.9 68.3	60,0
	112.0 110.3	98.0 98.5	4	86.7 85.8	48.9
	105.0	97.5 97.0	87.7 83.0	78.3	$\frac{39.7}{31.1}$
	100.5 99.4	97.0 95.9	81.4	68.3	28.8
	96.2	95.0	81.4 77.5 76.5		24.1
	95.8 92.0	95.2 94.0	76.5 69.6	59.2	22.5 17.5 15.5
	90.8	93.8	66.5	64.7 59.2 58.2 53.3	15.5
	87.1 85.1	92.5 91.9	58.9 52.3 34.5	51.2	11.8
	85.1 73.3	88.8 84.6	34.5	42.4	9.1 4.7
	64.1 54.3	78.5 63.9	$\substack{21.8\\11.6}$	33.6 25.3	2.6 1.2
	41.4 30.7	63.9 41.8	$\frac{3.8}{1.2}$	14.1 6.3	$ \begin{array}{c} \hline 1.2 \\ 0.3 \\ 0.2 \end{array} $
	11 ,	0.0	$0.0^{1.2}$	0.0	0.2

HYDROFLUORIC ACID + AMMONIA

			1					
Tsiklis, 1947			LXXIII	I. TWO INO	RGANIC CO	MPOUNDS .		
РКд	vol V ₁	% V ₂	Hydrof	luoric ac	id (HF)	+ Ammonia	(NH ₃)	
5000	38° 45.0	64.0 73.0	Duff o	nd Staub,	1033 (f	ia l		
6000 7000	35.0 32.0	73.0 76.0		f.t.	E	tr.t.		
6000	40° 45,0	61.0	29.8	124.6	-		2+1)	
7000 8000 9000	45.0 36.5 33.0 31.5	65.0 68.0 69.0	29.8 29 27 26 24	123 110 100	19 19 19 19	-		
P Kg	vol V ₁	% L ₂	22.5 22 21	65 19 28 19	19 19 19 19 19	-3 -3 -3 -3 (3+1	•	
	25°		20 17.7 16.6	28 19 24 31	19 19 16	-3 -3 (4+]	1)	
1000 2000 3000	2.5 2.5 7.0	95.0 90.0 86.0	14 12.3	16 25 32	16 16	-3 -3 -3 (6+)	D	
4000 5000	30.0 34.5 30.5	81.5 78.0	11	16	16	-3		
6000 7000	28.0	78.0 80.0						
1000	35° 6.0	92.5	Hydro	fluoric ac	id (HF)) + Antimo	ny pentaf	·luo-
2000 3000 3800	5.5 11.0 27.5	85.0 69.0 47.5	ride	(SbF ₅)				
	38°		Shair	and Schur	ig, 1951			
1000 2000 3000	$9.0 \\ 12.0 \\ 21.0$	91.5 80.5 63.0	- %	đ		đ		
1000	40°	89.0	100.00	15.5 3.142	37.40	1.341		
1500 2000	12.0 15.5 23.0 37.5	81.5 74.0	85.00 71.60 55.59	2.568 2.118 1.687	25.16 0.00	1.172 0.981		
2400	37.5	62.5	t	wt%	 -	mo1%		
				L	V	L	v	
			142.7 127.7 121.3	100	100 97.8	100	100 80.4	
			120,1	99.1 99.3 98.5	95.8 95.5 94.2 91.2	91.0 92.9 85.8 86.7 85.8 78.3	67.8 66.2 60.0	
			114.6 112.0 110.3 105.0	98.5 98.6 98.5		85.8 86.7 85.8	48.9	
			100.5	97.5 97.0	87.7 83.0	78.3 74.9 68.3	39.7 31.1	
			99.4 96.2 95.8	95.9 95.0 95.2	81.4 77.5 76.5	63.8	28.8 24.1 22.5	
			92.0 90.8	98.6 97.5 97.0 95.0 95.2 94.8 92.5 91.9 84.6 78.5 63.9	87.7 83.0 81.4 77.5 76.5 69.6 66.5 58.9 52.3 34.5	64.7 59.2 58.2 53.3	24.1 22.5 17.5 15.5	
			87.1 85.1 73.3	92.5 91.9 8 8. 8	58.9 52.3 34.5	51.2	11.8 9.1 4.7	
			64.1 54.3	84.6 78.5	21.8 11.6 3.8	42.4 33.6 25.3	2.6 1.2 0.3	
			41.4 30.7 19.4	63.9 41.8 0.0	$\frac{3.8}{1.2}$	$ \begin{array}{c} 14.1 \\ 6.3 \\ 0.0 \end{array} $	0.3 0.2 0.0	
4			1	· ·	=	- • -		

Hydroflu	Hydrofluoric acid (HF) + Bromine pentafluoride (BrF_5)					uoric a	cid (HF) + Iodin (IF ₅	-	luoride
Rogers,	Speirs and	Panish, 1956			Rogers,	Speirs	and al.	, 1956		
mo1%	f.t.	mo1%	f.t.		mo1%	f.t.	E	mo1%	f.t.	E
100 94.21 87.1 82.1 79.3 74.2 63.7 50.7 E: 4.8	-60.63 62.69 63.50 63.75 64.04 64.43 64.96 -64.62	40.5 33.0 18.1 10.7 7.5 5.5 3.3 1.4	-66.10 66.70 68.40 72.7 78.2 84.5 84.98 -83.94		100 98.01 97.04 95.49 92.90 92.00 80.40 64.40 52.30 49.13 44.81 37.13 29.81	9.43 8.11 8.00 6.70 4.46 4.46 -0.24 -6.00 -10.90 -12.20 -15.10	- - - - - 83.4	24.50 24.30 18.80 14.31 13.53 9.81 7.10 4.41 3.48 1.50 0.50	44.8 52.0	-83.55 -83.59 -83.49 -83.49 -83.49 -83.43 -83.43
0°		15°			mo1%	p		mo1%		
100 73.2 48.8 31.0 21.4 17.9 8.5 0.0	139 240 300 350 365 368 380 398	100 73.2 52.5 36.7 21.4	25 8 505 585 612 640 664		100.0 86.6 75.5 63.8	3 155 246 317	15°	40.9 29.5 17.4 0.0	447 537 597 664	:
mo1%	đ	mo1%	d		mo 1%		d			
0 2.6 23.9 ————	25° 0.945 1.13 1.79	37.1 50.2 100	1.97 2.15 2.465		100 43.1 10.5 7.0 0	2 5°	3.19 2.64 1.73 1.53 0.94	4 2 1		
M-	-60°	η 0°	+ 2 5°		M*	t	н	М	t	н
0 0.43 0.60 0.83 1.47 3.20 5.94 8.84 	0.00078 .0058 	0.000884 .00541 .00954 .0188 .044 .206 .635 1.080	0.000991 .00599 .0102 .018 .045 .190 .739 1.250		0 0 0.16 .16 .061 .083 1.47 3.75 3.75 3.75 7.28	25 13 22.7 19.0 25 25 25 25 25.2 20.8 16.2 25	0.0572 .0419 .0825 .0773 .0662 .0724 .1127 .1818 .1706 .1578 .321	11.3 11.3 20.6 20.6 20.6 23.7 23.7 23.7 44 45 48	25 19.9 14.5 24.8 19.5 14.5 25.5 19.3 25 25 25 25	1.104 .101 .103 6.06 6.01 5.75 11.5 11.3 11.1 7.8 7.1 5.7
.60 .83 1.47 3.20 5.94 8.84	.00954 .0188 .044 .206 .635 1.080	.0102 .018 .045 .190 .739 1.250	0,175 .500 .710 .780							

Hydrochloric acid (HC1) + Hydrobromic acid (HBr)						Hydrochloric acid (HCl) + Boron trifluoride (BF_3)	
Klemen	nc and Ko	ohl, 192	28			_	Booth and Martin, 1942
t			p				mol % f.t. E
mo1%	100	77.41	67.60	58.26	50:12		0.0 -113.0 - 0.0 -113.2 -
-75 80 85 90 95 100 115 120 125 130 -135 -80 85 90 95 100 105 110	551 416 309 222 154 105 69 45 30 19 12 - - - - - - - - - - - - - - - - - -	330 246 182 130 109 90 76 66 59 - 44.06	349 262 195 141 102 77 62 52 44 40 28.33	661 517 401 308 236 176 130 93 66 45 30 - 16,24	412 317 240 180 134 98 70 49 		4.7 -116.9 - 7.5 -118.6 - 9.8 -120.2 - 12.6 -121.2 - 14.8 -122.2 - 17.9 -123.1 - 20.3 -124.1 - 22.3 -124.1 - 25.1 -125.0 - 28.5 -125.5 - 30.1 -125.8 - 32.4 -126.2 - 35.0 -126.8 - 37.8 -126.9 - 40.3 -127.8 - 42.5 -127.8 - 42.5 -127.8 - 45.4 -128.4 -134.1 48.5 -128.5 -133.3 50.0 -129.2 -134.2 50.0 -129.4 -134.2 55.1 -130.1 -134.2 56.9 -130.3 -134.1 56.9 -130.3 -134.2
115 120 125 130 135	80 58 43 32 24	- - - - - acid (92 66 - - - - HC1) +	99 73 - - -	142 95 62 39 24 -		62.2 -131.4 -134.1 64.7 -132.2 -134.2 67.5 -133.3 -134.1 69.8 -133.7 -134.2 72.3 -134.1 -74.9 -133.9 -77.8 -133.2 -79.5 -133.3 -83.2 -131.9 -85.0 -131.6 -89.7 -130.5 -91.7 -129.8 -95.3 -128.7 -
Baume	and Geo	rgitses	, 1912 a	nd 1914			100.0 -127.0 - E: 72.3 mol % -134.15°
	f,	.t.	mo1%	f.	t		
0 8.5 13.4 19.3 23.8 28.7 32.2 36.3 39.0	11 11 11 11 11	11.6 15.7 16.3 16.9 17.3 17.4 17.2 16.3	42.4 44.8 55.1 60.8 67.4 76.0 86.3 100.0	11: 110: 10: 10:	5.3 4.7 1.4 0.4 7.9 0.9 2.3 2.6		Hydrochloric acid (HCl) + Boron trichloride (Cl ₃ B) Graff, 1933 (fig.) % f.t. % f.t.
			HC1) +	Diborane	e (B ₂ H ₆)		0 -115.5 60 -127.5 20 -124.5 80 -120 44 -134.5 100 -108.7
Mc Cai	rty, 194	9					
Az : 7	70.1 mo1	% -!	94°/755	mm 		_	

Hydrochloric	acid	(HC 1)	+	Sulfur	monochloride
						(CIS ₂)	

Terrey and Spong, 1932

%	f.t.	%	f.t.	
100 96.4 93.7 88.2 80.6 74.6	-76.5 77.0 77.5 79.0 81.0 -110.5	62-6 3.9 2.2 0.0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
mo1%	sat.t.	mo1%	sat.t.	
62.4 61.7 57.0 52.2 52.0 41.7 39.6 38.6 37.7	-89.0 89.0 83.0 73.0 72.0 57.0 64.0 -57.0	32.6 30.0 28.3 22.4 16.1 7.9 7.6 6.3	-64.0 64.5 56.0 58.0 56.0 76.0 76.5 -80.5	

Hydrochloric acid (HCl) + Sulfur dioxide (SO₂)

Baume and Pamfil, 1914

mo1%	f.t.	mol%	f.t.
100	_72.0	46	106.8.
91.1	76.5	43.8	108.7
85	79.9	40.6	111.2
80.3	83.4	3 7.7	113.7
74.7	85.6	34	117.0
71.8	88.1	30.6	121.8
67	90 .7	25.5	128.5
63.3	93.1	20.7	133.4
60.1	95.5	14.7	127.5
5 7. 6	97.1	8.3	121.4
50.7	-101.3	0	-112.0

Walden and Centnerszwer, 1902

t	н	t	ж	
	sat.	sol, of HC	Cl at -10°	
2 5	0.39 .26	155 158	$\begin{smallmatrix} 0.01\\.00\end{smallmatrix}$	
25 55 7 5 95	.20	145	.01	
115	$\begin{array}{c} \cdot 12 \\ \cdot 07 \end{array}$	135 115	.02 .04	
135 145	$\begin{array}{c} \textbf{.03} \\ \textbf{.03} \end{array}$	95 7 5	. 10 . 15	
150	.02	20	.31	

Hydrochloric acid (HC1) + Nitric acid ($HN0_{\mbox{\scriptsize 5}}$)

Kogan and Nikolaev, 1937

rogan c	ind Mikolacy, 170		
mo1%	f.t.	mo1%	f.t.
0	-111.5	49.46	-55.4
2.30	112.6	49.91	54.8 (1+1)
2.66	113.2	51.00	55
2.88	113.5	54.16	58
3.39	113.8	54.95	58.6
4.03	115.2	58.81	67
4.35	117	59.08	68.8
4.37	117	59.29	69.4
5.52	119	59.52	71.4
5.57	120	60.24	76
5.81	122 E	60.54	77.8
6.74	117.8	61.41	90 E
6.83	117	63.75	82
6.95	116	64.02	81
7. 68	115	65.87	75.6
7.78	$\frac{114.3}{113}$	70.69	62.2
8.33		70.64	61.4
9.71	$110 \\ 110 \\ 101.8$	71.76	59
9.78		74.69	57.2
15.54		75.38	57.5
1 7.54	99.4 tr.t.	74.52	51,6 (1+3)
18.66	101.4	74.88	57,8
25.00	97.4 (3+1)	77.24	58.6
23.21	86	78.46	58.4
24.82	83	78.83	58.6
24.72	83	81.71	65.9
28.03	76. 8	83.89	71.8
31.04	72	84.17	73.8
37.76	63.4	84.46	73.8
40.25	61 (3+2)	83.85	74.2
41.66	64.8	88.15	86.2 E
42.76	75	90.34	75
43.13	77 E	92.51	56.6
43.26	75	92.79	64.8
43.78	67	93.98	60
44.63 47.31	63.4 58	94.43 94.62	59.4 59 55
47.33 48.66 49.02	5 7 56 -55.6	95.75 96.48	-55
		····	
	- 		

Hydrobromic a	cid (HBr) +	Hydrogen su	lfide (H ₂ S)	Hydrobromic	acid (HBr)	+ Sulfur diox	ide (50 ₂)
Steele and Ba	gster, 1910			Steele and E	Bagster, 1910		
t	р	t	р	t	р	t	р
-76 -72	517 617	-68.6 -66.8	739 809	-76 -72	517 617	-68.6 -66.8	739 809
-74.1 -72.0	7 mol 464 512	-69.0 -63.8	607 783	-75.5 -72 -69.3	13 mc 485 579 664	-66.4 -64.3	757 858
-74.2 -69.0	31 mol 363 490 60 mol	-65.7 -60.9	589 762	-75.7 -72.6 -70	24 mo 416 482 552	-66.7 -63.9 -61.3	650 741
-72.7 -75.0	360 76.5 mc 338	-64.0 1 % -64.6	584 584	-73.7 -67.1	56.5 330 462	-51.3 mol % -58.5 -54.6	835 701 825
-72.0 -68.2	387 477 88 mol		736 822	-63.5 -76.0	551 71 mo 241	1 % -58,5	560
-75.4 -71.7 -67.6	326 396 501	-64.4 -60.9 -58.5	599 727 830	-71.0 -66.5 -62.7	307 379 458	-54.4 -49.8	667 815
-75.0 -72.7 -70.0 -67.5	93 mol 349 395 468 532	-65.0 -62.2 -59.5	606 706 815	-75.0 -69.3 -65.3 -59.6	304 393	-54.2 -49.6 -46.0 -42.8	506 618 728 829
-75.1 -73.1 -71.0 -69.0 -66.6	353 398 456 526 586	-65.0 -63.0 -61.0 -59.0	645 709 776 853	-75,1 -70,0 -66.5 -62.4 -58.5 -56.3	86.5 140 172 210 258 305 341	mo1 % -53.F -49.4 -45.6 -42.1 -39.3 -38.0	386 466 564 645 731 781
(fig.)	nol % V -70	p		-75.0 -70.0 -63.0 -60.3 -55.9	92 mo 100 123 153 192 241	1 % -52.0 -46.6 -41.4 -37.0	290 3 7 7 48 6 607
100 93 88 76.5	100 88.5 82 72	485 468 445	3	-73.0 -67.3 -60.3	21 30 58	% -53.0 -45.0 -36.0	94 152 260
60 31 7 0	60 41 18.5	435 430 460 580)))	mo)	1 % V	p	
<u> </u>	0	69(100 32 16.5 10 5.5 3 2 1.5 0.5	-66 100 95 87.5 78.5 69.5 54.5 34.5 17 5	40 100 200 300 400 500 600 700 800 840	

Hydroiodic acid (HI) + Deuteroiodic acid (DI)	Hydroiodic	acid	(HI)	+	Deuteroiodic	acid	(DI)
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Urey and Teal, 1939

%	% dissociation	%	% dissociation
39	8º	468°	
0.0 14.3	20.72 20.84	0.0 41.7 75.5	22.72 23.29 23.88

Hydroiodic acid (HI) + Hydrogen sulfide (H_2S)

Steele and Bagsters, 1910

20000		,_ ,_ ,				
t		р		t		<u>p</u>
			0 %			
-39.5		743	۰,	-49.2		450
-43.0		638		-52.3		383
-45.8		539		02.0		000
-40.0			_			
		36	mol %			
-62.0		305		-51.3		516
-57.7		379		-47.8		624
		63	mol %			
-68.4		285	moi ,	-52.8		637
-62.5		386		-49.4		765
-57.6		507		77,7		705
37.0			5 mol	%		
-73.0		264	o mor	-59.5		556
-68,4		343		-55.0		702
-64.0		423		-52.5		885
-04.0		423		-32.0		000
			mol %			
-73.0		302		-58.5		666
-68.0		404		-56.0		757
-63.5		515				
			5 mol			
-71.5		388		-62.5		631
-67.0		496		-58.5		773
		55	mol %			
-61.5		376	401 /	-59.0		429
-60.3		400		07.0		/
00,0			mol %			
-62.0		480		-58.8		576
-60.2		534		00.0		0.0
55,2			mol %			
-62.0		566		-60.2		620
02.0				00.2		040
75 1		252	.00 %	/F ^		
-75.1		353		-65.0		645
-73.1 -71.0		398		-63.0		709
-71.0		456		-61.0		776
-69.0		526		-59.0		853
-66.6		586				
						
mo 1%		Þ		mo1%		p
V	L			V	L	
		_(50°			
0	0	255	-	3.5	85.9	625
15	36	345		6	86.5	630
27. 5	55	410		30	93.5	725
33.5	63	450	10		100	830
51.5	77,5	545	•			
~ 1.0	,5					

Hydrogen peroxide ($\rm H_2O_2$) + Sulfur dioxide ($\rm SO_2$)

Matheson and Maass, 1929

 f.t.	mo1%	f.t.	mo 1%
-10.0	47.2	-5.3	5.8
-3.3	48.4	-11.5	11.7
+2.4	49.7	-18.0	13.9
+4.1	50.5	-31.0	19.5

Hydrogen peroxide (${\rm H_2O_2}$) + Ammonia (${\rm NH_3}$)

Hatcher and Maass, 1922

×	f.t.	%	f.t.
0 3.41 4.31 18.05 19.6 21.1 23.9 25.2 26.4 27.7 28.8	- 1.72 -13 -18 + 5 + 8 +15 +20 +22 +24 +25 +25	31.1 31.2 33.2 48.6 49.7 50.7 51.8 52.8 68.7 59.5 56.7	+25 +25 +25 (1+1) + 9.0 + 1.5 0 - 6 - 9.5 -73 -53.5 -32

Hydrogen sulfide (H_2S) + Ammonia (NH_3)

Scheffer, 1911

t	P	t	P	
	S + I	. + V		
30.0 31.4 31.6 31.7 39.6 39.7 41.2 41.4 41.5 50.3	3.3 3.45 3.45 4.3 4.4 4.6 4.6 5.9	59.9 61.1 63.1 64.8 65.1 70.3 70.6 79.4 87.7 87.8	7.7 8.0 8.4 8.8 8.85 10.3 10.4 13.7 18.3 18.3-18.5 19.3	

Hydrogen sulfide (${ m H_2S}$) + Ammonia (${ m NH_3}$)	Hydrogen selenide (${ m H_2Se}$) + Deuterium selenide (${ m D_2Se}$)
Scheflan and Mc Crosky, 1932	Kruis, 1941
t p t p	% f.t. tr.t.
S + L + V	II-I III-II
-21 435.5 -2.5 780.0 12 548.5 0 838.0 10 581.0 +2.5 917.5 7.8 604.5 5 1002.0 7.5 631.5 6 1075.0 5.9 664.0 7.5 1120.0 5 686.0 9 1201.5 -4 708.5 +10 1246.5	0 -65.73 -100.62 -190.9 32.82 -66.15 -99.42 -187.5 34.45 -66.21 -99.41 -187.4 53.68 -66.39 -98.87 -186.0 100 -66.91 -97.14 -182.6
mol% f.t. mol% f.t.	t Q mix. t Q mix. t Q mix
	32.82 mol %
100	-205.6 7.030 -176.5 10.84 -130.0 12.87 -200.8 7.577 -175.0 10.65 -129.3 12.88 -196.3 8.154 -172.1 10.79 -123.7 13.33 -193.1 8.694 -170.0 10.76 -117.4 14.18 -190.5 9.512 -166.8 10.96 -112.8 15.10 -190.0 9.851 -164.9 11.14 -107.9 15.92 -190 to-185 decomp161.8 10.91 -104.6 16.81 -184.3 14.92 -160.1 11.21 -102.9 17.22 -183.9 14.53 -154.3 11.29 -100.8 19.06 -183.2 12.03 -148.4 11.89 -99.5 tr.t181.1 10.84 -146.5 11.66 -95.6 14.42 -180.0 10.93 -140.6 11.87 -69.7 14.64 -178.8 11.04 -134.8 12.52 -66.2 f.t.
	34,45 mol %
Hydrogen sulfide ($\rm H_2S$) + Boron trifluoride ($\rm BF_3$)	-208.9
mol% f.t. mol% f.t.	53.68 mol %
0 -82 57.0 -137.5 1,3 84.5 60.5 138 27.6 86.5 63.9 139.5 7.3 90.5 67.1 141 9.3 93.5 69.7 142 11.6 97 72.6 144 14.0 100 75.0 146 16.7 102 77.3 147.5 19.7 104 79.8 146 23.5 106.5 82.4 144 26.9 111 84.8 143 30.0 113 86.4 141 32.6 116 87.6 139 35.6 119 89.0 139 (7+1) 38.9 125 90.5 137 41.9 128.5 92.1 137 44.4 133 93.7 132 (1+1) 46.9 137.5 95.6 135 49.0 141 96.9 130.5 50.5 137 98.4 131 53.6 -136 100.0 -128.5	-207.8 7.030 -170.8 11.19 -108.5 15.69 -204.6 7.408 -166.6 11.37 -106.0 16.71 -203.2 7.584 -162.5 11.39 -104.2 17.12 -199.6 7.961 -158.7 11.47 -102.1 18.54 -199.0 7.976 -154.4 11.63 -94.4 14.71 -195.8 8.448 -149.4 12.06 -90.2 14.66 -195.4 8.574 -144.2 12.24 -89.4 14.47 -192.3 8.897 -139.2 12.55 -85.6 14.62 -191.0 8.933 -134.5 12.74 -85.5 14.44 -188.7 9.450 -129.4 13.76 -81.2 14.51 -188.1 9.855 -124.4 13.61 -80.7 14.74 -188 to-184 dec123.0 13.72 - 76.7 14.44 -183.9 27.63 -119.4 14.26 - 76.2 14.76 -183.8 26.13 -117.8 14.45 - 72.5 14.54 -181.6 13.11 -114.9 14.89 -71.1 14.89 -181.3 13.08 -113.0 15.04 -63.2 16.86 -177.5 11.45 -110.6 15.61 -59.7 16.76

Ammonia ($N\!H_3$) + Hydrazine (N_2H_4)

Drago and Sisler, 1956

mol	%	P	mol	%	P
L	v		L	V	!
		88	3.5°		
0.00 4.29 18.93 19.89 29.37 29.57 35.80 35.93 36.12	0.0 0.195 0.631 0.673 0.823 0.842 0.984 0.991 0.987	49.0 49.6 38.4 38.0 33.7 31.6 31.6 31.5	47.82 48.29 58.77 65.65 65.81 66.40 75.30 77.58	1.33 1.67 2.01 2.03 2.03 2.36 2.49	26.2 25.9 22.0 18.6 18.5 14.6 13.5
0.00	0.0).3°	1 04	
0.00 4.86 9.69 9.76 10.00 10.10 10.24 10.54 13.35 13.93 19.65 20.47	0.0 0.315 0.501 - 0.538 - 0.537 - 0.901 0.928	62.2 58.1 54.0 54.1 53.8 53.9 54.1 53.6 52.1 51.6 48.0 47.8	25.47 26.57 31.91 31.77 36.79 48.88 60.21 67.64 68.20 75.80 79.51	1.06 1.11 - 1.42 1.76 2.20 2.74 2.77 3.20 3.66	40.8 40.9 38.4 31.8 26.5 22.4 22.2 17.6 15.2
			1.1°		
0.0 5.18 5.36 5.76 6.04 6.95 10.62 10.62 10.70 11.87 11.96 12.08 12.40 12.699 14.75	0 . 564 0 . 565 0 . 567 0 . 603 0 . 676 0 . 913 0 . 940 0 . 939	80.7 74.5 74.1 - - - 67.8 67.6 - 67.2 67.0	15.71 20.88 22.76 23.82 34.82 35.33 37.86 50.28 51.83 61.43 60.54 70.00 76.52 77.66 81.55	1.13 1.41 1.48 1.46 1.82 1.79 1.91 2.30 2.41 2.94 3.55 4.11 4.95	64.4 60.1 - 50.4 49.6 48.2 39.1 38.0 32.0 27.2 26.9 21.2 21.0
0.00	0.0		.9°		
0.00 7.42 7.65 14.22 15.17 22.83 23.39 37.65 39.34	0.0 1.03 0.965 - 1.84 1.88	97.9 86.1 85.2 77.6 77.1 70.3 70.2 56.4 55.8	40.01 54.17 62.18 62.50 72,11 72.40 74.99 81.80 83.31	2.47 3.04 3.30 3.49 3.63 - 4.90 5.92 6.02	54.3 43.9 36.4 36.3 30.1 30.0 27.4 21.4 19.9

Friedrichs, 1923

Ammonia ((NH ₃) + Ammor	aium chloride	(C1H ₄ N)	t p t p
				$V + L + NH_4C1$
Huma and	Lorson 1034			24.83 3117 6.94 1528
Hunt and	Larsen, 1934			19.89 2580 4.93 1412 14.88 2122 2.95 1293
mo1%	p me	o1% p		14.88 2122 2.95 1293 9.92 1734 0.00 1123
	25°			$V + L + NH_{L}C1 \cdot 3NH_{3}$
32,7	3140 6	.76 72 59		5.92 1459 -9.96 1919
29.6 27.6	3140 5	.88 7290		6.43 1554 20.00 1332
27.6 25.6	3643 5 4212 4	.29 7307 .76 7324		7 13 1729 28.54 925
25.6 24.4	4565 3	.86 7352		6.93 2402 31.43 807
22.9	4978 3 5308 2	.03 7376 .80 7386		6.43 2477 37.12 610 4.92 2545 37.55 596
21.4 20.4	5582 1	.91 7417		3.94 2554 46.54 368
18.8	5958 1	.62 7425		2.94 2548 52.47 269
17.0 13.9	6 2 90 1 6 7 45 1	.43 7434 .15 7442		0.00 2469 52.55 259 -4.97 2220
13.0	6856 0	.94 7452		
$\begin{array}{c} 11.8 \\ 10.5 \end{array}$	6965 0 7070 0	.89 7455 .81 7459		
9.61	7124 0	.75 7468		
9.12 7.58	7140 0	.69 7471		Schattenstein and Uskova, 1935
7,38	722 3			
				150
				0 5462.5 1.958 5355.5 0.304 5441.5 2.330 5344.5
				349 5436.5 2.514 5342.5
Abe. Watan	nabe and Hara,	1935		349 5436.5 2.514 5342.5 614 5416.5 2.721 5335.5 .761 5405.5
				.761 5405.5 1.430 5376.5
%	p	%	<u>p</u>	
21.84	6114	.89° 46.14	4251	
28.64	5923	48.93	3 7 59	
37.71 43.35	5218 4709	52.11 54.11	3172 2800	Kendall and Davidson, 1920
43.33		90°	2000	mol% f.t. mol% f.t.
37.46	4420		21 / 5	
43.04	3991	48.59 51.95	3165 2 65 4	0 -74.8 14.0 -5.1 1.2 67.4 16.1 0
45.82	3597	53.51	2328	2.6 50.5 18.1 +3.2
	9.9	10		4.5 35.0 21.0 0.6
19.48	4409	45.59	3020	6.9 25.6 22.9 9.5 7.8 22.0 25.0 10.17 (3+1)
28.03 37.26	4244 3 7 19	48.26 51.76	2640	8.7 19.6 26.0 10.0
42.66	3353	31.70	2196	10.2 15.0 27.7 9.1
	4.9	02°		11.4 11.9 28.5 31.9 12.1 -10.0
37.46	3106	42.39	2796	
00	0.0		2770	
18.04	3096	36.92	2581	
27.81	2902	30.72	2361	
	- 9.	96°		Scherer, Jr., 1931
17.03	2109	27.49	2003	c f.t. c f.t.
	-20,		-	
15.39	1373	27.33	1303	5.2 -49.6 7.6 -40.1 5.9 -46.8 8.6 -37.2 6.5 -44.2 9.6 -34.6 7.0 -42.2
,	20.0	27.00	1000	5.9 -46.8 8.6 -37.2 6.5 -44.2 9.6 -34.6
				6.5 -44.2 9.6 -34.6 7.0 -42.2

Abe, Watanabe	and Hara, 19	35		Ammoni	a (NH.) + Ammo	nium bro	mide (B)	-H. N)
% f.t.	%	f.t.		Ammoni	(1413	, Tamaro	iii diii bio	mide (Di	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
55.03 0.00	55.20	14.90		Roozel	oom, 18	385			
55.09 9.91 54.55 11.40	55 .2 4	19.89 24.83		mo 1%			p		
					~10°	_5°	<u>0°</u>	+5°	
				24.0 25.3	500	641	811 762	1007 954	
Schattenstein	and Uskova,	1935		25.3 25.9 26.5	436 405	562 523	716 672	900 852	
% d	%	đ		26.5 27.2 27.9 28.6 29.3 31.1	408	523 511 515	63 7 63 7	798 780	
	15°			28.6 29.3	408	512	636	780	
2.11 0.631 3.90 .641	12.02 16.10 17.22	0.689 .712		31.1 32.9	408	511	633 634	778	
7.41 .662 8.72 .670	17.22	.719							
				mo1%	+10°	+15°	p +20°	+25°	
				24.0	1253	1538	_	_	
Kikuti, 1939				25.3 25.9	1185 1121	1461 1306	-	-	
	d 	00	· · · · · · · · · · · · · · · · · · ·	26.5 27.2	1069 999	- 	-	-	
0.0 0.6776	0.6650 0.6	520 0.638	6	27.9 28.6	944 945	1161 1134	1368	1501	
4.8 .7023 9.1 .7251 16.7 .7655	.6904 .6°	780 .665 019 .689 441 .732	3 7	24.0 25.3 25.9 26.5 27.2 27.9 28.6 29.3 31.1 32.9	945 941 942	1135 1130	1350 1347	1591 1585	
16.7 .7655 18.9 .7776 24.9 .	.8008	-		mo 1%		p solid ((3+1)+(1+1))	
31.9 37.5		131 .803 316 -			-10	-5	0	+3	
40.0	<u> </u>	. 8556 . 8594	4 _	25.3	312	427	579 578	687	
+10°		30° +40° 595 2 0.57 9	1	25.9 26.5 27.2 27.9 29.3 32.9	313	721 ~	577 575	687	
0.0 0.6247 4.8 .6521 9.1 .6772	.6386	6246 .609	99 73	27.9 29.3	312	426	5 7 5 5 7 7	-	
16.7 .7215	.7098 .0	6978 .685 7734 .765	50	32.9	314	429	5 7 8	688	
28.6 .7936 37.5 .8469 44.4 .8853	. 8383	8294 . 820 8698 . 86	05 19	mo1%		p solid ((3+1)+((1+1))	
50.0 .9128 54.6 .9336	.9059	8990 89 9218 91	19		+4	+5	+6	+7	
+50°		70°	;	25.3 25.9	754	820	908 873	1010 967	
0.0 0.5629 4.8 .5944	0.5452 0.5 .5781 .5	5263 5610		25.9 26.5 27.2 27.9	7 30	_	850 832		
9.1 .6228 16.7 .6719	.6076	5916 6436		27.9 29.3	725 728	763 770	-	_	
28.6 .7523 37.5 .8115	.7414 .8024	7304 7931		29.3 32.9	-	769	-	-	
44.4 .8540 50.0 .8849 54.6 .9091	.8461 .8 .8778 .	838 2 8 7 08 8965		mo1%	р	f.t.	mo1%	p	f.t.
% t	d %		d	25.3 25.9 26.5	1099 992 918	7.5 7.2 6.8	27.9 29.3 32.9	7 96 794 7 95	5.5 5.5 5.5
55.34 20 55.48 30	0.9367 55.3 .9315 55.3 .9266 55.9	86 60	0.9157 .9105 .9052	27.2	844	6.2			
55,60 40	.9210								

mol% p mol% p	% p % p
25°	sat. sol.
39.1 1023 9.39 6711 35.3 1023 8.55 6834 30.9 1023 7.52 6951 28.6 1842 6.58 7043 28.1 1965 5.41 7135 26.5 2260 4.42 7222 25.0 2579 3.91 7254 23.3 3055 2.77 7325 22.1 3046 2.44 7349 20.3 3962 2.22 7359 18.9 4401 1.75 7392 17.6 4808 1.38 7415 16.2 5226 1.05 7432 15.2 5507 0.77 7451 14.8 5597 0.68 7455 12.8 6090 0.66 7459 11.9 6281 0.58 7463 9.97 6625 6625	0° a* b 34.10 640 43.09 575 29.78 639 33.91 578 22.10 638 27.31 575 20.65 638 21.10 577 18.13 578 15.89 363 11.13 362 *a - immediately b - after having cooled the solution at -10° ### p dissoc.
Schattenstein and Uskova, 1935	17.62 618 15.84 368 11.14 360 1.65 362 (1+1)
m p m p	
15°	
0 5462.5 1.536 5342.5 0.198 5445.5 2.194 5288.5 .377 5429.5 2.956 5222.5 .379 5429.5 3.507 5214.2 .557 5415.5 3.577 5167.5 .708 5404.5 4.317 5081.5 .926 5386.5	Roozeboom, 1885 mol% t absorption (NH ₃ gaseous) 21.1 -10 23.0 -5 25.3 0 26.1 +2.5 26.7 4 27.0 5
Linhard, 1936	mol% f.t. mol% f.t.
m p m p	(3+1)
0° 0 3220.9 6.311 2798 0.217 3208 9.956 2281 0.655 3187 11.40 2036 1.301 3157 13.70 1637 3.265 3050 14.08 1559 5.277 2899	25. 8.7 27.4 6.9 25.3 8.6 27.5 6.6 25.6 8.4 27.9 10 26.0 8.2 28.2 15 26.3 8.0 28.6 20 26.7 7.7 29.0 25 27.0 7.3 (1+1) 27.55 6.6 26.88 5 27.48 5 26.60 -10

	Ammonia (NH_3) + Ammonium iodide (NH_4 I)
Kendall and Davidson, 1920	Andrionia (Mi3) Andrionia in Todae (Mi41)
mol% f.t. mol% f.t.	Hunt and Larsen, 1934
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	mol% p mol% p
7.1 -76.7 25.7 13.1 10.5 -57.4 26.9 11.7 11.1 -49.0 27.2 10.9 12.4 -34.0 27.8 9.7 14.1 -23.1 28.2 9.2 16.6 -9.0 28.6 20.0 17.4 -4.1 29.3 32.6 18.7 +0.4 30.1 83.0 20.3 +6.0 31.4 +87.0	25° 33.6 736 9.40 6124 33.4 738 8.93 6218 29.4 842 8.26 6383 27.9 960 7.52 6547 25.0 1328 6.06 6833 23.5 1587 5.59 6911 21.9 1957 4.90 6875 21.4 2103 4.74 7041 20.9 2324 4.50 7080 20.7 2411 4.03 7124 20.2 2554 3.21 7220
Scherer, jr., 1931	19.9 2823 2.65 7.278 19.0 3013 2.19 7321 18.7 3167 2.04 7334
c f.t. c f.t.	18.0 3582 1.64 7372 17.0 3755 1.48 7388
47.1 -50.0 49.7 -40.5 48.2 -44.0 50.6 -38.2 48.9 -41.2 52.0 -31.8 49.0 -42.8	16.6 4060 1.19 7409 15.7 4486 0.99 7426 14.5 4773 0.86 7436 13.7 4875 0.74 7449 13.3 5174 0.68 7451 12.6 5530 0.62 7457 11.4 5807 0.56 7460 10.5 0.50 7471
Fitzgerald, 1912 m d n	Linhard, 1936
- 33,5°	m p m p
4.078 0.990 1461 1.888 .837 534.0 1.103 .766 391.6 0.644 .734 332.3	0° 3220.9 7.754 2217 0.204 3208 10.37 1632 0.405 3196 13.88 956.0 0.877 3167 15.52 729.0
m d m d 33.5° 4.282 1.0015 1.407 0.7927 4.041 0.9875 1.060 .7654	1,829 3098 17,68 521.4 2,698 3020 18,49 465.3 4,499 2804 23,08 268.9 6,278 2509 23,08 268.6
2.212 0.8530 0.576 .7281	Scherer, Jr., 1931
	c f.t. c f.t.
Schattenstein and Uskova, 1935 % d % d 15°	62.1 -50.0 66.7 -42.0 63.3 -47.5 69.2 -38.6 64.6 -45.2 71.2 -35.3
1.98 0.630 18.51 0.742 3.76 .641 23.88 .784 9.11 .676 27.83 .817 17.02 .730	

500	
-50° 13.3 206 L + V 13.6 202 14.1 195 14.5 188 15.0 181 15.6 172 15.8 168 15.6-32.5 182 (2+1) + sat.sol. + V 33.1 176-62 (2+1) + V 34.2-32.6 60 (2+1) + H _u N _u + V 97.1 59 H _u N _u + V -78.3° 8.22 36.9 L + V 8.64 35.6 9.05 35.1 9.63 334.0 10.2 33.1 10.8 32.0 supersat.sol. + V II.4 30.4	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
12.3 29.0	% f.t. % f.t.
11 4 1/ 0 90 0 (5,1) + ast as 1 + V	
11.4-10.2 32.0 (3+1) ** Sat. Sol.* ** V 16.7 30.4-26.1 (5+1) + V 33.3 22.5-90 (2+1) + V 33.3 32.5 (2+1) + (2+1) + V 33.3 32.5 (2+1) + H _h N _h + V 36.0 5.4 38.5 5.3 40.3-92.6 5.0 100 4.4-1.5 H _h N _h +V	0.0 -77.7 38.23 -47.4 14.98 82.5 38.71 44.85 16.03 83.0 39.19 41.2 17.79 83.8 39.76 37.7 17.80 84.4 40.16 35.65 20.48 85.2 40.74 32.7 22.40 86.0 41.29 30.25 24.52 86.1 41.82 27.1 25.49 85.4 42.66 24.0 27.58 82.9 43.28 21.35 29.20 80.9 44.02 18.65 30.39 78.5 44.78 16.3 30.98 78.0 45.59 13.4 31.80 76.8 45.85 12.5 32.41 76.0 46.17 11.3 32.91 75.4 46.42 10.7 34.38 73.0 46.56 10.2 35.70 73.15 46.16 28.4 35.86 71.4 46.46 20.2 36.04 68.0 46.86 13.6 36.23 65.8 47.00 9.0 36.73 60.5 47.15 8.4 37.73 51.3 48.10 +6.9

Ammonia (H	l ₃ N) + H	ydrazine ·	trinitride (H_5N_5)	Ammon	ia (NH ₃) + :	Silicium f	luoride (SiF ₄)
Howard and	Browne,	1934		Mille	r and Sisler,	1955	
mo1%		mo1%	p	- t	p dissoc.	t	p dissoc.
98 95 88.5 82.5 66 65.5 9 65 11	4.5 4.9 4.6 5.2 24-894 20° (1+2)	(1+2) + V 78 73 70.5 68 (1+2 + V 63.5	4.9 6.3 6.6 7.0) + V	-78.7 81.0 90.0 90.4 91.0 97.2 98.5 110.0 117.0 118.5 122.3 124.7 -125.8		-129.5 129.8 130.5 132.0 134.7 139.1 139.3 139.5 139.8 142.8 148.7 -149.2	48.3 49.1 49.7 54.9 64.4 82.2 82.1 82.7 86.3 103.3 136.9 140.3
65.5 9		(1+2) +) + H ₅ N ₅ +	р - Н ₃ N	-	nia (H ₃ N) + er and Rosenba		
	$\begin{smallmatrix}0.0\\10.0\end{smallmatrix}$		2.7 3.2	mo1%	f.t.	mo1%	f.t.
	20.1 21.2 33.8 44.7 47.0 49.6		5.4 5.7 111.2 22.4 26.8 30.6	100 80 60 40.	91.5 75 47	30.9 26 20 3	-19.0 E -12.5 (3+1) -20 -78.0 -77.8 (1+2)
Ammonia (M Lecat, 1949		·····	duoride (BF _s)	-	ia (NH ₃) + 1	Nitric acid	i (HNO ₃)
	0	_	33	%(1+1		%(1+1) f.t.
	80		180 Az 101	21.1 28.7 34.5 38.8 44.6 45.8 49.4 50.0 54.0	+8 23 28.5 29.5 27.5 27 23.5 23 17.5 16.5	52.7 54.3 54.7 57.6 54.0 54.3 54.7 55.9 56.2 57.5	11.5 12 12 11.5 11.5 14.5 17 26 27 33.5

(1+2)

N.B. see also NH $_3$ + $H_4N_2O_3$ (Ammonium nitrate)

Annual was nitrote (H. N. O.)	6.3-44			10.00	
Ammonia ($ m NH_3$) + Ammonium nitrate ($ m H_hN_2O_3$)	m	nstein and L			· · · · · · · · · · · · · · · · · · ·
See also the system :		р 15°	m	p	
Nitric acid + Ammonium nitrate Foote and Brenkley, 1921	0.253 .295 .476 .521 .745	5436 5432 5420 5417 5399	1,055 .270 .973 2,233	5365 5350 5288 5254	
mo1% p mo1% p mo1% p					
mo1% p mo1% p mo1% p 0° 10° 22° 22° 41.38 364 43.10 533 45.10 703 39.37 390 41.95 552 43.24 770 38.76 406 39.83 594 41.57 843 37.48 441 37.90 663 39.21 947 35.54 403 35.78 762 37.51 1031 33.18 573 33.93 852 36.22 1112 30.74 673 32.00 952 34.30 1253 28.87 763 32.00 952 34.30 1253 26.82 864 29.60 1112 33.02 1331 25.14 969 27.71 1254 31.87 1420 23.76 1064 26.24 1379 30.92 1495 22.46 1166 25.07 1484 29.96	Kurilov, 30.92 32.18 39.71 40.36 42.59 44.50 45.72 46.34 47.89 49.35 50.57	p disso 1033 1002 847 832 789 750 729 718 686 638 624	0° L	51.12 53.65 54.84 59.69 60.74 61.87 62.80 63.75 64.63 67.56 68.23	599 578 539 485 453 441 425 410 395 344 336
Hunt and Larsen, 1934	72.86 73.67 75.42	364 364 362	С	79.65 80.86 81.44	363 362 354
mo1% P mo1% P 25° 57.3 863 11.10 6130 55.3 863 9.90 6381	91.57 94.86 95.51 95.90	348 315 301 281	-10.5	97.31 97.78 98.43	223 216 170
45.0 880 8.06 6726 43.5 970 7.58 6827 39.1 1230 6.02 6992 36.2 1434 4.41 7166 35.1 1529 2.98 7279 34.1 1635 2.07 7355 31.3 1929 1.89 7366	55.12 58.15	345 306	L L + C		276 263
27.9 2358 1.04 7387 26.0 2667 1.41 7404 24.4 2914 1.23 7417 22.5 3311 1.08 7426	63.22 65.75 69.72	245 242 240	С	75.80 80.38 90.67	242 242 244
20.0 3859 0.89 7437 18.0 4386 0.79 7444 16.1 4891 0.74 7448 13.7 5511 0.71 7500 12.4 5807	94.90	166		96.81	98

Franklin and Kraus, 1898	Ammonia (NH_3) + Ammonium perchlorate ($C1H_4NO_4$)
% Db.t. % Db.t.	Mazzetti and De Carli, 1926
1.85 +0.087 14.16 +0.834 1.98 .101 17.72 1.192 3.57 .166 19.32 1.368	% f.t. m.t. % f.t m.1.
1.98 .101 17.72 1.192 3.57 .166 19.32 1.368 5.52 .263 21.73 1.675 7.76 .388 24.31 2.100 10.57 .557	9,90 -77 - 56,28 -57,6 -72 19,41 80,6 - 56,79 52,2 73,4 24,69 78,8 - 57,25 50,6 - 27,83 81,6 -96 57,54 51 - 32,00 84,6 97 56,84 46,4 -
Kurilov, 1898	35,12 85,4 94 59,85 41,2 - 33,17 88,2 94,6 60,97 36,5 - 40,73 88,5 97 61,50 34,2 - 42,20 89 95 62,50 34 -34
mol% f.t. mol% f.t.	44, 29 91, 4 96, 5 64, 50 22 33 46, 79 95, 6 96, 2 65, 50 19 31 49, 00 96, 5 96, 5 66, 00 15 34
100 168 38.3 0 74.2 109.8 36.9 -10.5 67.3 94 32.3 -30.0 53.8 68.8 13.9 -44.5 47.0 35.9 6.25 -60 45.9 33.3 0 -80	50,00 88 97.5 68.00 10 32 50,50 81.4 96.5 69.00 6 34 51.31 74 99.5 71.00 -0.5 -34 52.40 73 96.5 72.43 +9 - 53.30 71 - 75.0 32 - 54.81 63.4 - 76.5 40 - 54.94 62.5 -73 77.5 52 -
(3+1)	55.00 -63 - 88.7 140 -
Scherer Jr., 1931 c f.t. c f.t. 70.1 -50.6 75.1 -40.8 72.6 -46.5 77.0 -36.6 73.4 -45.0 77.4 -34.2 73.5 -44.0 9.77 -34.0	Diborane (B ₂ H ₆) + Boron trifluoride (BF ₃) Mc Carty, 1949 Az : 58.4 mol % -106°/760 mm
Schattenstein abd Uskowa, 1935	Hydrazine ($H_{4}N_{2}$) + Hydrazine trinitride ($H_{5}N_{5}$)
% d % d	Dresser, Browne and Mason, 1933
15° 3.00 0.636 18.35 0.724 6.34 .654 19.11 .730 8.40 .665 20.90 .740 12.22 .687 21.55 .744	## f.t. ## f.t. 100.0 75.4 48.8 52.7 94.0 67.5 42.9 43.4 89.1 55.4 37.9 31.5 83.8 58.8 32.8 18.5 77.4 65.0 28.0 3.1 73.8 66.2 24.8 -8.5 70.3 66.4 (1+1) 15.0 -7.8 64.9 66.0 7.1 -2.0 59.5 63.8 0.0 +1.0 54.9 60.2 E: 51° and -17.5°

Sulfur monobromide (SBr) + Phosphorus penta- bromide (PBr _r)	mol% n _D mol% n _D
	254
Pushin and Makuçz,1938 (fig.)	0 1.4536 47.84 1.3982 17.64 .4321 66.08 .3803
mol% f.t. E mol% f.t. E	36.21 .4109 81.99 .3660 38.67 .4078 100.00 .3529
100 107 - 24.5 42 -52 70.5 90 - 18.5 27 -50.5 63.5 85 - 12.5 11 -49.5 55 79.5 - 8.5 -3.5 -50 46 70.5 - 347.5 35 58 -53 0 -46	Bromine trifluoride (BrF_s) + Antimony penta- fluoride (SbF_g)
	Fischer, Liimatainen and Bingle, 1955
Sulfur monobromide (SBr) + Arsenic tribromide (AsBr ₃)	mo1% f.t. E tr.t.
Pushin and Makucz, 1938	0 8.7
mol% f.t. E mol% f.t. E 0 -46 ~ 55.5 +2 -56	7.3
2 -47 - 63 6.5 .59 8 -50 .56.5 73 14.5 .61 13.556 80.5 20 .62 19 .50.5 .56.5 90 25.5 .63 33 .23 .56 93 28 .64 39.5 .16.5 .56 100 31 .41	22.5
Sulfur monobromide (SBr) + Antimony tribromide (SbBr ₃) Pushin and Makucz, 1938	40.8 98.5 - 23.2 43.3 110.2 - 21.5 47.7 122.5-123
mol% f.t. E mol% f.t. E	73.8 30.922.8 - 75.7 33.222.6 -
0 -46 - 58 63 -62.5 12.546 67.5 70.5 -62 23.5 +22.5 -48 74.5 75.5 -62.5 31.5 34.5 -54 85.5 84.5 -66 40 45 -60 100 94 - 50 55.5 -62	77.2 34.122.9
Bromine trifluoride (BrF ₃) + Bromine pentafluo- ride (BrF ₅)	93.3
Stein, Vogel and Ludewig, 1954	(1+1) f.t. = 129.8
mo1% d mo1% d	(1+3) 33;5 tr.t. = -22,6 (3+1) -16,3
25° 0 2,8030 56,85 2,5990 10.09 .7646 67,11 .5648 16.10 .7418 69,65 .5560 30.74 .6993 72,20 .5495 38.68 .6609 34,72 .5102 45.32 .6389 86,91 .5025 46.13 .6366 100,00 .4604	(3+2) +30,8

Boron trifluoride ($\mathrm{BF_3}$) + Phosphorus trifluoride ($\mathrm{PF_3}$)	Boron trifluoride (BF $_3$) + Phosphoryl fluoride (F $_3$ OP)
Booth and Walkup, 1943	Booth and Walkup, 1943
mol % f.t. E	mol % f.t. E
100.00 -151.2 - 95.15 -154.5 - 91.62 -156.0 - 88.82 -159.5 - 84.72 -162.0 -163.5 82.80 -162.7 -163.5 79.86 -163.2 -163.5 77.14 -163.7 -163.7 72.08 -159.5 - 70.51 -157.5 - 63.92 -153.1 - 59.96 -150.7 - 55.95 -148.1 - 53.26 -147.2 -	100.00 -39.6 - 95.59 -41.4 - 87.44 -45.6 - 81.42 -43.5 -47.5 79.64 -40.5 -47.7 77.05 -37.5 - 71.88 -33.8 - 65.02 -29.0 - 61.04 -25.6 - 57.27 -23.8 - 0.00 -127.8 - E: 83.5 mol \$\$\$\$
47.46 -144.4 - 45.02 -143.7 - 42.51 -142.6 - 37.28 -140.8 - 32.75 -139.1 - 26.76 -137.0 - 21.75 -134.9 - 17.48 -133.5 - 12.90 -132.0 -	Boron trifluoride (BF $_3$) + Thiophosphoryl fluoride (F $_3$ PS) Booth and Walkup, 1943
7.45 -129.8 - 0.00 -127.5 -	mol % f.t. E
Boron trifluoride (BF ₃) + Thionyl fluoride (F ₂ 0S) Booth and Walkup, 1943 mol% f.t. E 100.00 -129.0 - 94.92 130.5 - 87.57 133.0 - 82.86 135.5 - 76.46 139.2 - 68.15 - 145.9 62.13 143.5 -145.9 59.60 142.5 - 54.83 140.8 - 49.85 140.4 - (1+1) 43.95 141.2 - 45.62 140.8 - 40.11 142.1 - 34.92 143.9 - 30.26 144.1 -145.4 25.45 139.2 - 19.76 135.3 - 14.73 132.9 - 10.05 131.3 - 5.93 129.5 - 0.00 -127.4 - E: 66.0 mol% -145.4° (1+1) f.t140.8°	100.00

708			BUKUN	IKIFLOOKIDI	E + NITROUS OXIDE
Boron	trifluoride	e (BF ₃) + N	itrous oxid	e (N ₂ 0)	Rorontrichloride (BCl ₃) + Borontribromide (BBr ₃)
Rooth	and Martin	. 1942			Joubeau, Richter and Becher, 1955
mo1%	f.t.	mol%	f.t.	E	Raman spectra
		40.0	114 7		32,6 50 63,1
100.0 100.0	-91.0 91.1	49.9 47.8	-116.7 118.3	_137.0	mo1%
95.0 92.1	92.3 93.7	45.0 42.4	121.0 122.3	138.1	149 (2) 150 (2) 149 (2) 166 (2) 167 (1) 165 (2)
88.9 86.9	94.8 95.8 96.9 97.7	40.2 37.4	124.4 126.1	138.0 138.0	149 (2) 150 (2) 149 (2) 166 (2) 167 (1) 165 (2) 200 (1) 200 (1) 200 (1) 216 (3b) 223 (1b) 216 (3)
84.9 82.2 80.3	96.9 97.7	35.0 33.6	128.4 129.5	138.1	253 (3) 257 (0) 253 (3)
l 76.0	98.4 100.8	32.5 29.9	130.4 132.9 135.6	138.3 137.9	277 (1) 277 (5) 279 (0) 310 (0) 310 (0) 296 (?) 344 (4) 345 (7) 344 (4)
74.9 72.7	$101.2 \\ 102.5$	27.6 24.6	137.7	138,0	407 (6) 408 (7) 407 (7)
74.9 72.7 69.7 67.3	104.0 105.7	22.9 19.8	137.9 135.8 134.5	138.4 137.7	605 (0) 601 (0) 600 (?)
62.5	106.7 108.2	17.4 15.3	133.2	137.0 137.7	- 804 (0) - - 817 (0) - - 872 (0) -
60.0 57.5	109.8 111.3 113.0	$\frac{12.9}{10.2}$	132.3 130.0	-	902 (0)
55.0 54.9 52.0	113.3	5.1 5.0 0.0	128.7 128.5	- 	700 (0)
52,0	-115.3	0.0	-126.8	-	
					Boron trichloride (BCl ₃) + Boric anhydride
ĺ					(B_2O_3)
Boron	trifluoride	$(BF_3) + Su$	lfur dioxid	le (S0 ₂)	
					Goubeau and Keller, 1951
Booth	and Martin,	1942			mol% f.t.
mo 1%	f.t.	E mol	% f.t.	E	(1+1) 10 -40
100.0	-73.5	- 49.	9 -96.0	-(1+1)	20 -3 30 +12
96.6 94.5	74.6 75.4	- 47. 46.	5 96.2	-	40 +20 50 +23-25
92.3	76.5 77.8	- 45. - 42.	3 96.2 4 96.4	-	30 120-20
89.5 86.8 84.6	79.2 80.8	- 49. - 47. - 46. - 45. - 42. - 37. - 35. - 32. - 29.	2 97.0 5 97.2	- - - -	
82.3 79.9	$81.5 \\ 82.8$	- 35, 32,	2 98.4 4 99.2	-	
77.7 73.9	84.7 86.9	32. 29. 27.	5 100.5 5 101.4	_	Boron tribromide (BBr ₃) + Arsenic tribromide
69.7 68.9	90.1 90.8	_ 25. 25.	0 102.9	-	(AsBr ₃)
66.9 65.0	9 2. 3 - 93 . 9	96.4 22. 97.1 20. 97.1 17.	6 105.0 2 106.8	-	Adamsky and Wheeler, Jr., 1954 (fig.)
62.2 60.0	96.7	97.1 17. 97.2 15.	3 112.8	-128,6	mol% f.t. mol% f.t.
57.4 54.7	96.2	_ 10,	2 119.2	-128.6 -129.2	0 -47 50 +10
52.7 50.0	96.3 -96.0	_ 4.	4 124.2 8 128.6 8 127.3	- 128.6 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
		0.	0 126.8	-	20 -11 80 19 30 -2 90 24 40 +6 100 30
	2.017		.0 -126.7	-	40 +6 100 30
1	2.0 mo1% 4.8 mo1%	_9 7. 15° _128.60°			

Phosphorus trichloride (PCl₃) + Phosphorus oxychloride (POCl₃)

Sokolova, Illarionov and Volkovich, 1952

mo1%	p	P ₁	P2	
		27°		
85.99 84.48 6 7. 65	50,67 50,41 75,52	25,59 28,83 31,96	21.08 21.58 29.56	
67.25 41.50 23.00	68.73 101.13 112.00	49.86 89.12 102.51	18.87 12.01 9.49	
22.10	110.80	100,95 47,75°	9.85	
84.0 83.75 68.25 67.95 42.45 42.0 24.50 23.50	99.54 110.40 133.70 138.30 217.24 221.00 226.90 230.40	55, 54, 91, 90, 171, 179, 205, 211,	23 03 75 21 58 97	44.11 56.17 42.67 47.55 36.93 41.42 20.93 19.31
81.25 80.25 67.75 69.00 67.25 43.00 42.52 24.25 25.00	167.00 164.90 198.70 200.20 202.60 286.10 290.22 361.00 365.80	98. 94. 137. 134. 134. 255. 262. 322. 324.	26 73 85 72 09 02 58	76.12 70.64 59.97 65.45 67.88 31.01 28.18 38.42 41.25

Phosphorus tribromide ($P\mathrm{Br}_{3}$) + Arsenic tribromide ($A\mathrm{sBr}_{3}$)

Pushin and Makucz, 1938

mol %	f.t.	m.t.	
100	+31	-	
96	+30	-	
90.5	+28.5	+21	
35.5	+26.5	-	
80	+24.5	+10.5	
64.5	+17.5	- 2.5	
56 44	+12	-10	
44	- 3.5	-21	
33.5	- 4	-	
22.5	-14	-32	
0.0	-40	-	
		-32	

Phosphorus tribromide (PBr $_3$) + Antimony tribromi- de (SbBr $_3$)

Pushin and Makucz, 1938

mo1%	f.t.	E	mo1%	f.t.	E
0 6 13.5 19 23 30 40 50	-40 -5.5 +23 36.5 42 51 59 65	-41 -43 -41.5 -40.5 -41.5 -41.5	60 66,6 68,5 79 83 89 100	70 74.5 76 82 84 86 94	-41.5 -42 -43 -44 -43

Phosphorus triiodide (PI_3) + Arsenic triiodide (AsI_3)

Jaeger and Doornbosch, 1911-12

%	f.t.	m.t.	tr.t.	min.	
100.0	141.5	-	_	~	
91.0	137.1	132.5	-	-	
87.2	134.9	127.0	~	-	
83 .2	132.2	-	69.1	20	
81.5	130.8	-	70.5	30	
65.4	119.0	_	71.7	110	
54.4	109.9	_	72.3	140	
36.5	93.4	_	73.7	250	
23.6	78.2	70.7	73.0	240	
19.3	7 3.4	66.5		-	
15.4	70.9	6 5 .5	-	_	
13.0	68.75	64.5	_	_	
7.8	65.5	62.5	-		
0.0	61.0		_		

Phosphorus triiodide (${\rm PI}_{\rm S}$) + Antimony triiodide (${\rm SbI}_{\rm S}$)

Jaeger and Doornbosch, 1911-12

f.t.	E	min.
170.3	-	-
	2 25	100
		100
		360
		740
		900 920
61.0	-	-
	170. 3 168. 0 162. 5 161. 55 138. 0 110. 15 58. 3	170. 3 168. 0 162. 5 162. 5 162. 5 162. 5 162. 5 162. 5 162. 5 162. 5 163. 25 163. 0 163. 0 164. 15 165. 30 166. 15 166. 15 166. 30 166. 15 166. 16 166. 16 166. 16 166. 16 166. 16 166. 16 166. 16 166. 16 166. 1

Arsenic trichloride ($AsCl_3$) + Silicon tetrachloride ($Cl_{\mathfrak{q}}Si$)

Sisler, Pfahler and Wilson, 1948 (fig.)

mo1%	f.t.	mo1%	f.t.
0 20 30	-18 -25 -26.5	70 80 90	-32 -37.5 -52
40 50 60	-27.5 -29.5(1+1) -30	92 100	-69.5 E -68 and (3+1) ?

Arsenic trichloride ($AsC1_{\text{\tiny 3}}$) + Germanium tetrachloride ($C1_{\text{\tiny 4}}Ge$)

Sebba, 1951 (fig.)

t	mo1	%	t	mo.	1%	
	L	v		L	V	
		78	30 mm			
130	0	0	100	28	72	
125	2	17	90 85	60	88 96	
120	4	30	85	90	96	
110	13	30 56 64	83.1	100	100	
105	19	64				

Arsenic tribromide ($AsBr_{\tt 3}$) + Antimony tribromide ($SbBr_{\tt 3}$)

Pushin and Makucz, 1938 (fig.)

mo1%	m.t.	f.t.	mo1%	m.t.	f.t.
0 10 20 30 40 50	31 32 37 41 46 50	31 37 45 51 59 65	60 70 80 90 100	59 64 72 82 90	71 76 31 86 90

Pushin and Lowy, 1926

mol%	f.t.	m.t.	mo1%	f.t.	m.t.
0	31	o= ^	60	70.5	58.5
10	36	32.0	70	75.5	64.0
20	44.5	36.0	80	81.0	72.0
30	50.5	42.5	90	86.0	82.0
40 50	$\begin{array}{c} 59.0 \\ 65.0 \end{array}$	46.0 50.0	100	90.0	-

Arsenic tribromide (AsBr₃)

+ Phosphorus pentabromide (PBr₅)

Pushin and Makucz, 1938

mol %	f.t.	m.t.	mol %	f.t.	m.t.
0	31	-	37	58	22
9.6 17.5	27.2	00 F F	49 59	70.5	22 21 18 15
21.5	$\bar{33}$	23.5 E 23.5	59 68	78.5 85	18 15
29	48	20.5	100	107	-

Arsenic triiodide (AsI_3) + Antimony triiodide (SbI_3)

Jaeger and Doornbosch, 1911-12

%	f.t.	m.t.	f.t.	m.t.
	(coo	ling)	(heat	ing)
100	170.3	_	170.8	_
76.7	154.75	149	156.5	-
52.4	139.6	136	140.5	135
39.7	135.9	135.5	138.6	135
33.1	135.85	135.5	138.4	135
26.8	135.35	135	139.1	134
13.6	132.2	137	140,1	135.5
0	140.75	-	~	-

Quercigh, 1912

mo1%	f.t.	m.t.	mo 1%	f.t.	m.t.
100	165	_	35	132	128
90	15 7	150	30	130	128
80	147.5	140	25	131	128
70	143	136	20	132	129
60	141	134	10	133.5	130
50	140	133	0	135.5	_
40	135	130		-	

Vasiliev, 1912

E: 42.84% 135°

Antimony pentafluoride (F_5Sb) + Antimony pentachloride (Cl_5Sb)

Ruff, 1909

mo1%	me1	ting	
	beginn.	stop	end
0 3.5 17.1 20.3 221.6 25.0 26.8 27.8 8 32.4 36.5 34.3 36.5 39.42 44.5 45.7 50.5 51.5 552 554.6 61.3 63.3	55.6.5.5.6.5.5.48.5.68.5.78.65.5.9.47.26.41,60.25,40.16.5,24,40.9,24.35.24.5.9,23.6.24.5.9,23.6.24.5.9,23.6.24.5.9,23.6.24.5.0.6.5.5.5.44.5.5.5.5.5.5.5.5.5.5.5.5.5.5.	_	7 6 40-41 61.5 80 81.5 78 76-77 72.5 64 56.5 47 40 39 30 23.5 27.5-29.6 27 32 38 41 46 50.5 56.5 59 65
65.7 69.70 72.74 75.75.5 77.77 79.80 82.84 85.90 92.93 95.96 97.5 98.99 100	58 61 70 (65),71 72 72,5 73 73 73 71 70 66 67 63 -5.5,61 -3.0,34 -6 -5.8 -4.4 -4.8 -2.7 -3 +2.8 (2+1) (3+2)	70.8	70 71 78 77 79 79 79.4 (83,5) 79,4 (83) 79,4 (83) 78,5 (81,5) 79,5 (82,5) 78,5 (81) 77,(80) 73,5 69 66.5 50 44 42 24 24 20 -2.5 +1 +2 4 (2+3) (1+2)
(1+3)	. ()	(- , 2)	(2.0) (172)

Trichlorsilane (HSiCl₃) + Silicium tetrachloride (SiCl₄)

Grady, Chittum and Lyon, 1951

%		đ		
	16•	20°	23°	27°
100.0 80.98 72.21 61.32 52.29 43.52 36.72 24.16 0.0	1.4887 .4599 .4471 .4315 .4186 .4070 .3968 .3805 .3497	1.4807 .4519 .4386 .4233 .4104 .3984 .3886 .3733 .3415	1.4746 .4459 .4328 .4169 .4040 .3921 .3825 .3659 .3350	1.4662 .4374 .4241 .4084 .3951 .3836 .3740 .3583 .3264

Silicium tetrachloride (SiCl $_{\rm h}$) + Sulfur dioxide (SO $_{\rm h}$)

Bond and Stephens, 1929

%	f.t.	%	f.t.	
0.0 1.12 1.16 1.30 3.97 5.63 8.10 11.54 14.81 16.88 23.19 27.93 32.00 37.63 39.28 41.72 43.29 45.95 47.45	-69.7 76.5 77.0 72.4 46.4 38.6 37.5 28.2 20.1 15.1 12.8 8.8 8.2 6.3 5.5 4.9 4.8 4.8 4.8	53,13 54,71 59,15 62,56 66,78 71,25 76,82 80,66 84,60 87,63 89,73 91,65 93,67 95,64 97,17 97,17 97,42 98,91	-5.0 5.4 6.1 7.0 8.1 9.2 12.9 16.6 22.0 27.5 38.4 46.6 55.0 70.2 74.1 79.1 -76.5	

Germanium tetrachloride ($\text{GeC1}_{\text{\tiny μ}})$ + Germanium tetrabromide ($\text{GeBr}_{\text{\tiny μ}}$)

Delwaulle, 1952 (fig.)

0 -50 - 60 -28 -35 20 -50 -52 70 -6 -15 40 -44 -50 100 +26	 1.0.	mate	, o	1.0.	121. C.
19 -11 -00 100 120					

Boric	anhydride ($(B_{2}O_{3}) + S$	ilicón dioxide (SiO2)	Reamer	, Richter	and Sag	e, 1954		
l	eva, 1939			PKg	20%	15%	ກ 10 %	5%	0%
%	530°	n(in po 630°	•				4.5°		
				Bubble	(2.1) ^a	(2.0)	(1.9)	(1.5)	(0.46)
0 2	13000 6900	2800 2730	410	point	496	472	461	468	490
2 5 6 8.4 12 18 22	6000 7150 15300 17000 49500 119000	2000	400 420 565 425 1400	14 28 42 56 70 87.5 105 122.5	498 500 503 506 507 512 514 519	476 480 483 486 488 494 496 502	466 470 474 477 482 487 491 496	473 476 480 483 487 492 497 502	494 497 502 504 505 510 514 518
Nitric	oxide (NO)	en dioxide (NO_2)	140 157.5 175 192.5 210	522 527 531 536 538	506 512 514 519 522	500 506 509 513 517	506 510 514 518 522	522 526 529 534 537
Purcel	1 and Chees	sman, 1932		Í			<u>38°</u>		
t	p	t	<u> </u>	Bubble		(5.6)	(5.0)	(4.2)	(2.2)
8.9		30.2 m	101% 794	point	326	312	307	312	332
-1.5 -12.5 -16.5 -32.4 -47.5 50.2 3.5 -4.4 -17.0 -28.5 -40.0	1622 1055 600 249 71,5 mol% 675 431 225 112 49.6	-1.2 -9.7 -19.3 -30.3 -42.5 -69.8 m 1.0 -7.5 16.4 -27.0 -37.5	510 278 146 63	14 28 42 56 70 87.5 105 122.5 140 157.5 175 192.5	330 334 336 338 341 344 350 352 355 356 358	320 320 320 323 326 330 335 338 340 344 350 358	310 317 320 322 326 328 331 335 337 340 342	320 320 324 327 330 332 335 339 342 344 348 350 352	334 334 341 343 345 348 351 354 356 358 362 364
Wittorf	f, 1904			245 280 315 350	363 369 3 7 6 384	351 354 360 366	348 350 355 358	356 358 36 2 366	370 374 378 382
- [%]	f.t.	E	min.				71.0		
99.9 91.2	-10 -18	-115.25 -113.75	0 70	Bubble	(18.9)	(16,8)	(14.3)	(11.4)	(7.8)
82.9 80.0	-31.7 -3 7. 7	-115.25	170 190	point	211	207	208	209	217
71.0 63.6 61.3	-73.0 -108.5 -104.5	_113,75 _112	295 240 -	14 28 42 56 70	220 220 220 220 222	210 210 218	210 210 218	210 210 218 220	220 220 223 226
Whittak	er, Spragu	e and al., l	1952	87.5 105 122.5	225 227 230	220 224 226 228	221 224 227 229	224 226 229 232	228 231 234 236
%	f.t.	%	f.t.	140 157.5	232 234	231 232	229 232 233	234 236	238 240 243
100 97.11 94.45 91.70	-11.30 -14.11 -17.06 -20.40		-23.51 -28.81 -33.61	175 192.5 210 245 280 315 350	236 239 242 247 252 257 262	235 237 240 246 249 254 258	236 237 241 246 249 253 256	238 240 244 247 250 254 257	243 246 248 254 258 260 262

		104	,5°									
Bubble point	(49,3) 122	(42.9) 118	(36,3)	(29.8) 122	(23.4) 132	Nitr	ogen	dioxide	(NO ₂)	⊦ Nitrou (N ₂ O ₃	ıs anhydri)	ide
					140	Baum	e and	Robert,	1919			
28 42 56 70	128 132	$1\overline{28}$ 134	124 131 138	131 137 144	142 148 154	t			p			
87.5 105 122.5 140 157.5 175 192.5 210 245 280	136 140 144 148 151 152 156 159 163 168	134 142 146 150 153 155 160 162 164 169	143 148 152 156 158 159 162 164 168	144 151 155 160 163 166 166 169 170 174	160 165 168 172 174 176 178 180 182 185	-24 -16 -8 0 +8 +16 +20	0% 70 108 172 266 396 598 684	20% 110 168 262 400 590 860 1040	40% 170 260 398 600 882 1270 1520	60% 268 409 623 925 1331 1857 2130	80% 460 685 1018 1475 2072 2825 3260	100% 865 1250 1785 2480 3360 4430 5000
315 350	174 179	174 178	176 178	182 183	188 190	78		f.t.	%	f.	t.	
		138	3°			0 10.9		-11.5 15.6	51.9 53.4 59.7		.5 .0 .0	
Bubble point	(110,4) 16	(9 7. 6) 16	(84.4) 20	(72.1) 34	(60 . 7)	18.9 20.2 23.5 30.4 33.8		19.9 20.5 22.0 26.0	73.4 80.1 86.3 91.8		.0 .0	
70 87.5 105 122.5 140	- - - 22 27	- 18 26 32	22 29 36 45	41 49 58 65	63 71 80 88 94	37.6 42.9 45.9		27.1 31.0 34.0 -37.5	97.0 100.0	100 -100	.0	
157.5 175 175 192.5 210 245 280 315 350	34 39 45 50 62 75 88 98	40 45 52 56 69 80 92 101	45 52 57 64 69 81 91 100 108	72 77 83 88 98 104 111 116	99 104 109 112 117 121 125 128					+ Nitri (N ₂ 0 ₅	c anhydri)	de
	gures in	brackets	represent	t bubble p	oint	Z LOW	ry an	d Lemon,	f,t,		E	
pi	essures.					0 4.22 8.7. 11.8 16.1: 19.44 29.3 39.8 50.00 60 70 80 90 100	6 6 2 6 1	- - (- (- (-	10 11.8 14.3 16.3 18.2)-10. 19.1)-6. 23.2)+1.1 +8.0 12.9 18.5 ±1 24.5 " 30.0 " 35.0 "	4	-15.8 -15.8 -15.6 -15.7 -15.7 -	

	·····		M	TI TI	Public 1997			
				8		p		
Nitrogen d	lioxide (NO ₂	\ + Nitric a	cid (NO H)	'	00	12.50	25.00	
Microgen	TOXIGE (NO2) + MILIZE A	cia (No ₅ n)	100	15.9	31.5	62.1	
Corcoran.	Reamer and Sa	ισε. 1954		99 98	19.0 21.0	37.2	71.5	
Corcoran	Nounci una pe	ige, 1707		97	22.8	42.5 46.1	81.5 88.4	
P Kg		đ		II 96	24.0 25.2	48.9 51.0	93.5 9 7. 9	
	71.1°	121.1°	171.1°	94	26.1	52.2	100.5	
Bubble	(119.0) ^a	(134.1)	(162.7)	95 94 93 92 91 90 89 88 87	27.0 27.5	53.6 53.6	103.4 106. 0	
point	1.57 ^b	1.345	1,168	91	28.0 28.5	54.7 55.8	108.5 111.2	
		95 🙎		89	28,9	5 7. 0	114.2	
140	1.47	1.345	1.185	88	$\frac{29.3}{30.0}$	58.2 59.7	$118.0 \\ 122.3$	
210 250	$\substack{1.47\\1.48}$	$\frac{1.355}{1.368}$	1,105	86 85	30.4 31.5	61.5 63.5	127.4 133.1	
		(02.0)	(100 =)	-∥ 84	32.0	65.8	139.0	
Bubble	(62,6)	(83.8)	(132.7)	83 82	33.3 34.4	68.5 71.5	145.7 152.6	
point	1.47	1.328	1.124	81 80	36.0	71.5 74.8 78.5	160.0 167.5	
		85 %		79 78	37.5 39.2	78.5 82.5	176.0	
70 1 7 5	1.47 1.48	1.346	1.144	II 77	41.8 43.7	87.3 92.1	184.5 193.5	
350	1,51	1.366	1.182	76	46.5 49.2 52.3	97.5 103.4	203 213	
Bubble	(15.8)	(46.5)	(105.5)	76 75 74 73 72 71	52.3	109.8	224	
point	1,47	1,278	1.059	73 72	55.8 59.2	116.5 123.8	235 248	
point			1,007	- 71	59.2 63.3 67.5	131.7 140.0	261 275	
70	1 40	70 %		69	72.0 76.0	149.0 158.5	290	
$\begin{array}{c} 70 \\ 105 \end{array}$	$\substack{1.48\\1.48}$	$\substack{1.34\\1.34}$	1.06	68 67	76.0 82.5	158.5 168.7	306 3 2 5	
210 350	1.51 1.54	$\substack{1.34\\1.46}$	1.14 1.14	66	88.3	179.6	345 36 7	
	1,07	1.40		65	94.3 100.5	191.5 204	391	
Bubble	(8.6)	(34.8)	(99,7)	63 62	107.4 114.5	217 231	461 441	
point	1.43	1.193	0.979	61	122.0	245	469	
		50 %		60 59	129.5 13 7. 5	259 273	496 524	
70	1.47	1.212	-	58 57	145.5 153.5	288 302	551 5 7 9	
105 210	1.48 1.52	1.230 1.271	0.984 1.054	57 56	162.5	317	605	
350	1.54	1.299	1.101					
-	s in brackett	s represent	bubble point					
pressu b : Doneit	ires y at bubble p	i n +		Bousf	ield, 1919			
b . Densit	y at bubble p	——————————————————————————————————————		.			4	
				·	t	1.	%	
						L ₁	L ₂	·····
Klemenc an	d Rupp, 1930				4 11	4.90	54.4	
RICHCIIC AII				-	18	6.67 8.05	54.3 54.0	
		P ₂		-				
		.5°						
	99 98 9 7 95	5.02						
	97	8.97 11.32						
	95 90	14,36 16,19						
				_				

% L	; v		b.t.			mo1%	f.t.			.t. 7.1	
100 95 89 73 0	762 100 37 17 0		78.5 65 55 33 22			100 93,66 91,26 88,12 87,48 80,32 77,36 74,26 71,42	43.8 45.2 45.4 49.5 49.9 52.4	54. 54. 52. 51. 50. 49.	.79 4 .04 4 .00 4 .24 3 .16 4 .78 3	15.7 15.5 15.4 189.0 185.3 187.1 185.6 187.6	
sat.t.	%	sa	t.t.	%		70.64 70.64 68.44	60.2	46 44	70	34.0 26.9	
-11.0 -0.8 +15 20 35 50 C.S.T	L ₁ 52 50 45 44. 37. 30	3 1 5 4 5	L ₂ 3.25 5.5 9.5 6°	2.75 4.20 5.20 7.15 10.0 20.0		66.36 65.16 62.70 61.25 59.71 59.54 58.76 58.16 57.84	59.8 55.2 51.9 50.0 49.5 49.5	340. 32. 3. 3. 3. 40. 32. 1. 2. 1. 3.	62 74 75 00 76 24 64	18.6 16.4 12.6	+ L ₂
Klemenc	and Spic	ess, 1947									
wt%	mo1%	sat.t.	wt%	mol%	sat.t.	Pasca	l and Ga	rnier, 19	19		
47.88 47.00 47.16 45.65 43.95 39.12 37.67 34.72 32.75	40.15 39.31 39.39 37.70 36.47 31.84 30.94 30.77 28.19 26.20	-33 -12 -2.7 +27.5 +48.5 +57.6 +59.7 +59.0 +60.1 +60.9	32.66 23.17 20.37 13.21 11.50 9.61 5.17 5.16 3.63 2.48	25.91 18.03 15.74 10.06 8.67 7.14 4.07 3.90 2.74 1.86	+61.0 +58.5 +56.5 +43.6 +35.4 +26.6 +4.7 +6.4 -6.5 -21.8	7.0 6.5 6.0 5.2 0.0	5° - 1.483 .479	11° - ' 1.470 - 4665	15° 1.462458	_	0
	and Garn	ier, 1919				100 99.34 97.80 94.80 91.0 87.5	1.5300 - - - .5910	1.5130 .5135 .5205 .5330 .5495 .5650	1.5030 - - - - - 5560	1.4985 - - - - - - - - - - - - - - - - - - -	1.4870 - - - - -
%	f	.t. E	(or tr.t	.) mi	n.	84.0 76.44 73.5	- .630	.6057	- - 598	.592	.578
100 90.6 85.0 82.0 70.0 64.0 62.0 60.0 53-2.7 0.0	-76 -7; -5; -4; -3; -2 75 -1;	8.5) 8.5 8.5	-73 -73 -73 -73 -73 -48.5 -48.5 -48.5 -48.5	5 8 10 5 2 2 - - -		73.5 70.7 70.0 64.0 65.8 55.5 55.0 51.89 49.29 48.96 48.0 45.0 44.27	.642 650 .650	.6140 .627 .630 .627	.616	.610	.585

%		d		78		d		
1-	00	12.5°	25.0°		4°	11°	18°	
100	1.5472	1.5245	1,5018	100	1.5381	1.5254	1.5125	
99	.5511	.5285	,5062	98.7832	.5442	.5312 .5574	.5185 .5452	
98 9 7	.5549 .5596	.5323	.5105	91.979 83.12	.5684 .6033	5918	5803	
96	.5626	.5362 .5402	.5150 .5193	73.91	.6335	.6219	.6099	
95	。566 7	,5443	.5235	ll 65.075	.6544	.6424	.6301 .6339	
94 93	.5707	.5482	.527 6	62.40	.6584 .6636	.6479 .6510	,6381	
92	.5747 .5787	.55 2 8 .5564	.5320 .5361	56.29	.6644	.6517	.6386	
91	.5827	5603	.5403	62.40 57.99 56.29 53.30	.6642	.6512 .6501	.63 77 .6361	
90 89	.5867 .5907	.5646	.5443	51.34 50.04	.6636 .66 2 6	.6491	6351	
88	.5947	.5685 .5 72 5	.5486 .5525	48.63	.6610	.6491 .6487	.6319	
87 86	.5987	.5 7 65	.5566	46,90	.6572	.6427	.6277 .4574	
86 85	.6027 .6069	.5806	.5606	6.14 3.51	.4858	.4699	.4538	
84	6109	.5847 .5887	.5645 .5683	1.51	.4343	.4684	.4523	
83	.6149	.5928	.5722	0	.4829	.4669	.4506	
82 81	.6190 .6233 .6274	.59 7 0	.5760					
80	.6274	.6011 .6054	.5800 .5838					
79	.6314	.6093	.5872					
78 77	.6353 .6389	.6132	.5910					
7 6	.6425	.6172 .6207	.594 7 .598 2	Nitrogen	dioxide ($N0_2$) + Nit	rosyl chl	
7 5	.6462	.6244	.6015					(NOC
74 7 3	.6494	.6278	.6047	Addison	and Thompso	n 1040 /	e: \	
72	.6522 .6550	.6310 .6340	.60 77 .6106			m, 1949 (fig.)	
71	.6577	.6366	6134	8	f.t. m.	t. %	f.t.	m.t.
7 0 69	.6601 .6613	.6393	.6 1 60					
68	.6643	.6414 .6433	.6181 .6200			to 59.3	-74.5	-74,5
67	.6660	.6450	.6216	10 20	15.5 22	23 70	68	74.5
66 65	.66 7 5 .6691	.6464	.6232	30		38.5 74 57 80	66 65	74.5 70
64	6702	.6478 .6486	.6245 .6253	32	32 7	4.5 90	62	65
63	.6711	.6495	.6264	40 50	39.5 7 -51 -7	4.5 100 4.5	-60.5	-60.5
62 61	.6718	.6500 .6504	.6268	30	-31 -7	4.0		
61 60	.6723 .6725	.6505	.6272 .6273					
59	,6727	.6508	.6270			·		
58 57	.6727 .6726	.6503 .6498	.6265	ll l				
56	6722	.6492	.6257 .6249	Nitrono	n diovido /	NO NO CO	leum diam	
55 54	.6717	.6486	.6238	Mitroge	ii atoxtae (NO_2) + Su	irur atox	.1ae (50;
53	.6707 .6697	.6477 .6467	.6225 .6212					
52 51	.6687 .6675	.6454 .6443	.6196 .6176			tinescu, 19		
50 49	.6662 .6647	.6430 .6415	.616 .614		f,t		%	f,t.
48 47	.6632 .6617	.6398 .63 7 8	.612	100	-71	4	5	~25
46	6597	.6378 .6354	.610	93 90	-73 -72.	5 4 5 3	<u>o</u>	~25 -20
45 satd.	.6597 .65 7 0	.633	.608 .605	80	-69	3	0	- 19 and - 19 and
			•	70	_65.	5 2	5	_ 10 and
				= 60	-62 58	2 1	U O	-18
				55 50	-58 -35	1	0 0	- 18 - 13 - 9
								_

				II			
	1td. / N O) i Niemio o	oid (UNO)	%	f.t.	%	f.t.
Nitric anhy Berl and Sa		p		13.11 12.56 12.36 11.94 11.87 11.56 11.40	-43 -46 -48 -53.5 -54.5 -57 -61	11.35 10.97 10.92 10.49 10.02 9.90	-62 -69 -68 -56 -45 -42
	100 % 14	.07 % 12.36	% 11.19 %	8	đ	%	đ
0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0	19.6 27 26.5 28 35.5 38	5.3 -1.7 24.2 8.4 31.8 8.3 41.4 8.2 55.5 1.3 75.0 7.3 99.8 8.5 138.0 9.1 197.0	36.8 51.8 73.0 103.0 178.4 265.8	14.02 12.95 12.40 12.36 12.07 11.96 11.83	1.530 .553 .571 .572 .582 .588 .593	11.56 11.35 10.76 10.02 9.90	.605 .612 .630 .643
t	10.76 %	p 10.33 %	9.90 %	Lee and	Millen, 1956		
0.0	22.9	34.8	50.0	M *	đ и	М ж	đи
5.0 10.0 15.0 20.0 25.0 30.0 35.0	34.3 47.4 67.2 96.0 142.0 213.7	49.8 71.0 102.0 156.7 226.0 422.7	72.0 103.8 157.0 241.0 323.0 464.0 692	0 0.0850 0.0976 0.1018 0.1024	1.564 368 - 385 1.5652 - 390 1.565 390 1.5663 -	0.4288 0.5033 0.5224 0.5502	1.569 468 - 477 - 498 1.571 500 - 505 1.5736 -
%	р	K.	p	0.1991 0.2057 0.2109	1.566 415	0.6304	1.574 535 - 570
12.56 11.78 11.39	17.1 17.9 18.1	11.19 10.76 10.02	18.5 22.9 42.6	0.3082 0.3103 0.3893	- 413 - 441 1.568 441 - 455 1.5694 - 468	0.7262 0.7400 1.279 1.8297	1.5757 - 1.576 574 - 725 1.6116 - 817
11.78 11.39	24.2 26.2	$10.81 \\ 10.33$	34.3 49.8	0 0.1505			1.584 438
12.56 11.78 11.56	29.2 31.8 33.5	11.35 10.33 10.02	36.8 71.0 87.3	* M = mo	olarity of N	205	
13.11	39 3	11 10	51.8	Pacault a	nd Chedin, 1	950	
12.36 11.78 11.56	39.3 41.4 45.1 47.2	10.76 10.33	67.2 102.0	%	χ	%	χ
12.95 11.78 11.19	55.5 64.4 73.0	10.76 10.33	96.0 156.7	95.8 90.67 86.5	0.317 0.314 0.315	82.7 78.6 77.5	0.317 0.315 0.313
12.95 12.36 11.78	71.0 75.0 79.8	11.19 10.76 10.33	103.0 142.0 226.0	%	Saenger, 19	% 1	U
				14.29 13.29	0.409 .390	11.34	389 39 2
%	b.t.	Z	b.t.	13,11 12,23	.387 .382	10.97 .4 10.76 .4	407 415 419
12.95 12.56 12.23 11.78 11.56	65 63 60.5 55.5 52.5	11.19 10.81 10.76 10.33 9.90	48.5 45.5 44.5 37.5 35.5	11.94	. 385	10.49 .4	119

Sulfur dioxide (SO_2) + Ammonium iodide ($NH_{\rm h}I$)	Sulfuric oxychloride ($S0_2C1_2$) + Phosphorus oxychloride ($P0C1_3$)
Foote and Fleischer, 1931	Luchinskii and Likhacheva, 1935 and 1938
t p t p t p	b.t. % b.t. %
L+V+(3+1) V+NH ₁ I+(3+1) L+V+NH ₁ I -24.40 365 -21.50 255 -13.85 482	L V L V
23.05 390 20.00 282 12.35 523 19.35 456 18.05 326 10.45 574 16.10 513 16.80 357 7.20 681 13.45 556 14.90 411 5.45 743 12.25 576 12.70 476 2.65 855 11.25 591 10.70 545 0.00 976 10.20 606 9.15 612 9.00 620	104.0 100.0 100.0 80.0 47.1 26.9 99.2 90.3 83.8 77.3 40.0 21.3 94.4 80.0 67.6 71.6 20.0 9.5 85.6 60.0 38.8 70.0 9.7 3.6 81.4 50.6 30.1 69.4 0.0 0.0
L+V+NH _h I+(3+1): _8.8°	% f.t. % f.t.
Sulfur dioxide ($S0_2$) + Sulfuric acid ($H_20_{\downarrow}S$)	100.00 +1.3 55.84 -38.2 96.44 -1.0 51.89 -43.6 89.68 -5.5 48.84 -47.6 86.30 -8.0 46.80 -50.2 85.99 -8.2 41.22 -56.9 83.84 -9.8 35.40 -64.1 81.64 -11.4 31.66 -69.1 81.12 -11.8 28.91 -72.5 79.02 -13.1 27.61 -73.8
t (°c) adsorpt. ceeff. t (°c) adsorpt. coeff.	76.17 -15.4 24.72 -71.8
11.1 33.78 42.0 12.82 16.1 28.86 50.9 9.47 17.0 28.14 62.3 7.21 26.9 19.27 84.2 4.54	72.94 -18.1 17.25 -66.8 68.78 -22.1 8.67 -60.8 64.16 -27.5 2.33 -55.9 59.78 -32.9 0.00 -54.1
	% d 15° 20° 25° 30° 35°
Sulfur trioxide (SO_3) + Nitric acid (NO_3H) Amelin and Borodastova, 1949	100 1.6840 1.6749 1.6656 1.6564 1.6472 80 .6804 .6699 .6618 .6525 .6438 60 .6771 .6682 .6600 .6514 .6430
wt% mol% m.t. f.t.	40 6753 .6681 .6597 .6510 .6427 20 .6756 .6678 .6591 .6499 .6405 0 .6767 .6667 .6560 .6462 .6356
0 0 16.8 16.8 9.7 12.1 18.3 30.2 10.1 12.6 18 25.5 22.2 26.4 - 58.2 23.8 28.96 - 86.5	% л 15° 20° 25° 30° 40°
27.4 31.87 - 106.5 89.8 91.8 - 59	100 1209 1137 1077 1024 972 80 1198 1129 1082 1030 989 60 1145 1099 1054 1004 964 40 1082 1031 992 957 912 20 1010 953 908 888 848
Sulfur trioxide ($S0_3$) + Chlorsulfonic acid ($C1H0_3S$)	20 1010 953 908 888 848 0 894 857 820 787 753
Balton and Adam, 1948	
mol % p mol % p	
15° 0 130 22.5 96.7 45.0 26.5 4.5 109 33.3 77.0 60.3 10.5 14.0 122 35.6 79.5 63.3 12.8 14.6 117.5 37.5 46.8 78.1 4.1 16.1 126 42.8 30.3 100.0 0.0	

Nitric acid (HNO.) + Sulfuric acid (H ₂ O _h S)	Swinaı	rski and De	mbinski, 19	256	
,	•	~ -	mo1%	đ	mol%	đ	
Holmes, 1920				1	.5°		
% f.t.	% f.t.		100 94.95 90.10	1.836 .865 .876	77.3 73.7 67.1	1.869 .867 .853	
100 +10.0 96.24 -2.2 93.73 -18.2 91.95 -15.1 89.33 -0.7 88.67 +2.3 86.93 +2.0 84.93 +1.0	81.50 -1.4 82.77 1.5 81.68 1.6 78.78 5.1 74.06 11.5 68.87 19.0 58.83 40.0 48.95 -50.0		85.40 79.33	. 876 . 876 . 873	61.1 56.3	.841	
84.85 +1.4	200,0		Bingham	and Stone	, 1923		
			%		η		
				10°	20°	40°	
Pascal and Garmier, 1 t d 98.0	919 and Pascal, 1919 t d t 15 1,8390 -	đ	0.00 12.50 25.00 37.50 50.00	1037 2415 3418 12900 18500	877.0 1910 2639 8658 12100 27000	680.6 1319 1689 4975 6644 12000	
95.0 4 1.8617 92.0 4 .8617 90.0 5 .8720 85.0 3 .8830 78.0 4 .8728	20 .8446 38 20 .8446 38 10 .8610 28 16 .8690 27 15 .8600 31 26 .8363 36	1.8339 .8339 .8490 .8570 .8413 .8328	62.50 75.00 87.50 100.00	385 00 556 00 645 00 333 00	35 100 39 200 22 200	15900 15900 18300 12700	
72.0 4 .8637 56.0 5 .814 49.0 4 .7608 41.0 4 .7315 35.0 5 .7154 25.0 4 .6723	14 .8014 30 26 .7292 35 15 .7150 25 25 .6846 35 15 .6551 30	.7790 .7162 .6925 .6693 .6313	Rhode %	s and Hodge	η		
% d	% d				25°	50°	7 59
98.0 1.8390 4 95.0 .8500 4 92.0 .8600 3 90.0 .8620 2 85.0 .8700 2 78.0 .8600 1	9.0 1.7450 11.0 .7150 35.0 .7000 55.0 .6550 00.0 .6280 10.6 .6000 6.6 .5500		0 10 20 30 40 50 60 70 80 88 90	1100 2000 5000 9000 15000 28000 46500 70000 98500 110000 100000 62000	750 1500 2000 4000 6000 10000 15000 22000 29000 33000 32000	550 900 1500 2200 3100 4900 7000 8200 12000 13600 13500 10400	400 700 1000 1500 2000 2900 3900 5000 6200 7100 7100 6000
1 C - 1	1040 and		100	63000	23000 24000	10400	5800
Klimova and Saslavsk Usoltseva, Klimova a							
mol% wt% d	mol% wt%						
20 100.00 100.00 1.83 93.66 95.83 .85	0° 46.71 57.70 72 43.74 54.75 59 38.87 49.75	1,7841 .7735	Swina mo1%	rski and Do	embinski, 19		
87,49 91,59 87,37 81,50 87,27 81,50 87,27 87,567 82,87 86,65 75,67 84,63,37 72,92 83,60,14 70,14 82,56,96 67,32 81,53,83 64,47 80,50,75 61,59 79,	90 29.51 39.45 92 24.99 34.14 77 20.58 28.74 77 16.27 23.22 81 12.06 17.59 85 7.95 11.85	.7548 .7349 .7136 .6913 .6672 .6422 .6166 .5538 .5130	100 94.9 90.1 85.4 79.3	37200 5 38800 0 43800 0 54500	77.3 73.7 67.1 61.1 56.3	56100 52100 44800 38500 32400	

mo1%	н	mo1%	н
	15	0	
100 97.7 90.7 87.6 81.8 75.2 70.4 64.95 59.96	1.56 4.23 7.35 6.78 6.35 5.75 5.31 5.16 4.92	54.3 44.92 34.5 25.3 15.5 12.3 8.2 5.0 0.0	4.87 4.85 4.88 4.92 4.96 4.80 4.36 3.64 2.31

Pacault and Chedin, 1950						
%	χ	78	х			
100	0.406	2 5	0.347 .342			
89 81	.405 .400 .393	22 15 12	.333 .332			
74 67 53	.388 .373	11 8	.332 .330			
40 38 34	.360 .358	6 5	.326 .325			
34	.357	0	.316			

Pascal	and Garni	er, 1920		
8	U	%	U	
	20	0		
22.7 41.5 55.8 70.3	0.430 .402 .385 .370	82.2 90.1 100.0	0.354 .344 .335	

Nitric acid (HNO_3) + Phosphoric acid (H_3O_4P)

Danilov, Matveiev and Buchgalter, 1940

mo1%	р	mo1%	р	
0.1 7.0 17.5 26.0 38.5	45.0 45.9 42.8 40.2 34.9	54.3 65.7 78.5 91.5	25.6 21.5 12.1 7.0	

Sulfuric acid (H_2SO_4) + Selenic acid (H_2SeO_4)

Kapustinski and Jdanova, 1951

%	f.t.	%	f.t.	%	f.t.
H ₂ Se0	4	H ₂ SeO ₄	.H ₂ 0	H _≈ SeO ₄	4H20
0 8.79 11.05 21.82 31.85 41.92 50.09 58.65 66.27 76.48 87.20 100.00	10.3 7.2 5.5 6.3 13.3 21.3 27.3 32.4 38.5 44.5 49.9 56.0	0 13.8 26.41 37.65 48.17 56.90 63.41 76.26 85.39 91.01 100.00	9.5 8.5 7.0 5.0 8.0 10.6 12.6 15.6 19.0 21.6 24.0	0 11.27 24.3 31.41 47.02 56.09 65.59 74.35 83.24 88.38 100.00	-28.8 30.7 32.5 33.6 37.1 38.8 41.0 43.3 45.7 47.6 -50.5

Sulfuric acid ($H_{8}SO_{14}$) + Chlorsulfonic acid ($HSO_{8}C1$)

Palm, 1956

mo1%	-lg h _o	mo1%	-lg h _o
0	-10.89	69.8	-12.06
4.1	10.98	81.0	12.21
11.1	11.25	88.2	12.37
24.8	11.48	95.0	12.42
37.9	11.61	97.5	12.55
54.6	-11.78	100.0	12.78

h_o = acidity ion concentration

Sulfuric acid ($\rm H_2SO_4$) + Nitratopyrosulfonic acid ($\rm HNO_9S_2$)

Borodastova, 1949

8	f.t.	m.t.	%	f.t.	m.t.	
0 9.27 18.88 30.05 40.48	+10 +8 +2 -6.5 -16.5	+10 +4 -1.5 -10 -24	44.25 53.52 62.71 71.07	+28 53 66.5 76	42 61 70	

Sulfuric a	cid (H ₂ SO ₄) + Ammonium		Cambi and Bozza, 1923
		(H ₈ 0 ₄ N ₈ S	, ,	wt% mol% f.t. tr.t.
Kendall an	d Landon, 19	920		1 2
0.0 1.69 3.47	+10.4 + 6.2 + 1.3	mol % 6.44 8.36 9.41	- 8.5 -16.3 -20.7	8 6 -7.5
9.41 10.10	- 5.0	10.48 3+1) 18.14 20.67	+35.1 +42.7	44.64 37.34 97.9 (1+1) 50.06 42.67 125.0 53.71 46.27 137.0 57.09 49.68 144.4 57.57 50.04 144.0
11.48 12.36 13.14 14.33 16.21	- 3.9 + 5.3 +10.5 +17.6 +26.7	23.12 25.24 27.88 30.41	+46.9 +47.9 +45.8 +39.8	59.83 52.51 140.6 111 61.21 53.94 134.9 111.6 133.8 62.28 55.07 146.0 111.2 134.0 64.22 57.12 175.0 110 - 67.82 61.00 219.0 110 135.0 70.32 63.75 278.0 - 230
27.98 28.69 29.62	- 2.6 + 4.8 +16.0	30.33 30.41 30.87	+21.4 +22.0 +26.1	Sulfuric acid ($0_{ m h} H_2 S$) + Ammonium acid sulfate
31.21 31.63 32.65 33.48 35.06 36.19 37.31	+32.9 39.4 53.5 63.1 79.8 89.1 97.4	42.47 45.18 46.82 47.60 48.08 49.95 51.84	+126.4 136.8 141.1 142.6 144.9 146.9	(H ₅ NO ₄ S) Gillespie and Wasif, 1953 m d n
39.13 40.67 41.81 63.45 63.98	109.5 120.8 124.3	53.08 54.27 (1+y) 67.37	141.7 137.2 +318.0	25° 0.0964 1.8306 24620 .3741 .8323 23920 .6566 .8348 23930 .9245 .8391 24420 1.3000 .8437 24860
55.05 55.43 56.17 57.18 57.98	+281.5 +147.2 151.7 159.3 176.7 187.7	59.78 60.62 61.64 62.38	+210.2 218.5 229.2 232.0	Chlorsulfonic acid ($ClHO_3S$) + Pyrosulfuryl chloride ($Cl_2O_3S_2$)
				Sanger and Riegel, 1912
Wasif, 1955				% b.t. dew point f.t. m.t.
0.47 0.78 0.97	766	transport cation 25° 0.031 0.036 0.034	0.030 0.031 0.040	100 153 152,5 -37,5 -37 99 153 151 41 36 95 153 143 42 37 91 147 142 41 38 82 141 139 43 39 70 140 139 45 39 52 153 133 47 43 37 153 135 50 47 25 153 139 57 53 11 153 137 66 61 4 153 142 - - 0 152 151 -81 -80

Pyrosulfuric acid ($\rm H_2S_20_7$) + Chlorsulfonic acid ($\rm ClS0_3H$)

Luchinskii, 1940 (fig.)

mo1%	f.t.	mo1%	f.t.
100 83.89 80.0 66.67 60.0 55.39	-80 -112.6 E -87 +3.1(1+2) -2 -15.4 E	50.0 40.0 36.64 20.0 0.0	+2,6 (1+1) -17 -38,8 E +8 +35

mol 9	%	b.t.	
L	<u>v</u>		
0 42 62 72 79 85 90 95	0 1 7 14 27 40 53 72 100	75 80 90 100 110 120 130 140	

Orthophosphorous acid ($\rm H_3\,PO_3$) + Orthophosphoric acid ($\rm H_3\,PO_4$)

Rosenheim, Stadler and Jacobsohn, 1906

mo 1%	f.t.	mo1%	f.t.	
0	76.3	54.5	+3.0	
9.1	65.8	61.0	-13.0 E	
21.5	53.7	62.5	-10.5	
31.5	42.4	68.8	+1.5	
38.9	31.1	81.8	+21.0	
43.7	23.8	91.5	+30.3	
49.6	13.2	100.0	+35.0	
50.0	12.7		• -	

Orthophosphoric acid ($\rm H_3\,PO_4$) + Mono ammonium orthophosphate ($\rm H_5NO_4P$)

Parravano and Mieli, 1908

% (1+1)	sat.t.	% (1+1)	sat.t.
11.85 16.94 53.54 59. 7 3	33.0 43.1 50.2 67.9	82.63 84.69 89.06	77.5 80.5 91.0

Ammonium chloride ($\text{ClH}_{14}N$) + Ammonium bromide ($\text{BrH}_{14}N$)

Rassow, 1920

mol %	m.t.	f.t.	
0 15 25 35 50 85	520 517 514 511 518 536 542	520 518 515 512 521 537 542	

Mandleberg and Staveley, 1950

	mo1%		tr.	t.	
		expans	sion	contr	action
_		heating	cooling	heating	cooling
	0.0	-30.9	-30.6	_	~
	$\frac{1.3}{3.5}$	-32.3 -35.0	-32.0 -34.5	_	-
	8.5	-58	_40.6	-34.6	-34.0
	$\frac{11.6}{15.4}$	_76. 5	_60,9	-29.1 -22.6	-27.9 -21.3
	$\frac{13.4}{21.3}$	-	_	-16.4	-16.4
	59.8	-	-	-4.0 -19.4	-3.6 -19.3
	84.8 100.0	-	-	-38.8	_38 .7

Stephenson and Adams, 1952

mo1%	tr.t.	mo1%	tr.t.	_
0	-30.9	37.6	-3.7	
1.2	-33.7	64.4	-6.2	
3.5	-38.9	81.1	-17.8	
9.0	-70.2 to -55.7	89.6	-26.4	
9.0	-32.1	95.6	-33.2	
19.3	-16.5	100.0	-38.6	

	um chloride	ŕ	+ Ammonium nitra (H _h N ₂ O ₃)	ate
%	f.t.	8	f.t.	
100 98,22 96.0 93.0 90,5	169.6 165.3 159.3 152.8 147.2	90.0 87.9 86.68 85.55 84.46	146.3 141.7 150.3 162.0 173.5	

Perman	, 1922			
%	f.t.	8	f.t.	E
100 98.1 97.0 95.6 94.0 91.9 91.0 90.0	169 164.9 165.5 158.8 155.2 150.2 147.6 146.0	89.0 87.9 87.8 87.0 86.0 85.5 85.1	143.2 140.9 141.2 146.5 155.6 162.9 170.6	140.7 141.1 141.3 141.4 141.0

E: 141

%	f.t.	m.t.	tr.t.
100	169	169	125.5
98.5	165.5	_	109
97	162	157	109
96	159.5	153	109
96 95	158	151	109
94	155	148	109
93	153	_	109
92	150.5	141	109
90	146.5	141.5	109
87	146	141	109
86	154	141.5	109

mo1%	f.t.	E	mo1%	f.t.	E
		I			
100	170	_	80	150	14
95	160	-	7 5	162	11
90	152	-	70	1 75	Ħ
88	149	141	68	184 tr.	t. "
83.5	141	141			

mo1%	f.t.	E	f.t.	E	f.t.	E
	I	I	11	ī	Г	V
100 98- 7 0	125	112.5	85	7 2	35	30

Ammonium nitrate ($\rm H_4N_2O_3$) + Ammonium sulfate ($\rm H_8N_2O_4S$)

Nikonova and Bergmann, 1942

%	f,t.	tr.t.	f.t.	tr.t.	
I			II		
0 10_65	169.6 -	180	125 -	110	
III		IV			
0	84		3 2	-	
0 10_65 10_40	-	87 -	-	50	

Leskovich, 1955 (fig.)

no1%	flowing pressure (Kg/cm ²)				
	30°	40°	50°	60°	
0	4800	4100	3700	3200	
4	10000	8400	5900	5000	
8	12600	11400	7200	6600	
12	15000	12000	8400	7700	



1156	1	156	
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DESIDERATA

1331

DESIRATA

This is a list of desirata, that means a short list of papers that I was still unable to find: they would interest me, only if there are in them, numerical data about concentrated binary mixtures, or accurate data on very pure organic compounds and to anybody who is able to help me in that matter I would be very grateful.

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ERRATA 1327

SYMBOLS AND ERRATA

VOLUME I

1 2 38 Ma 68 1: 07 Ti Cy 65_166 70 C, 04 C, 20 21 85 Pro	For Vo :volume at 0% For D : diffusion ratio For C.S.T. and C.V.T. : T (absolute) Tabl. of Ruhemann : t Tabl. of Sage and Lacey : mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene hH10 aH40	volume at 0° diffusion coefficient t (centigrade) -t and invert % Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	Az : azeotrope η and σ (water=1), means water at the same t. x_1 and x_2 = moles $\%$ D η given by = η -($x_1\eta_1 + x_2\eta_2$) Polystyrene (C_8H_8)
1 2 5 8 Ma 8 1: 07 Ti Cy 65-166 70 C, 04 C, 04 C, 04 C, 05 C	Tabl. of Ruhemann: t Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	t (centigrade) -t and invert % % Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	η and σ (water=1), means water at the same t. x_1 and x_2 = moles $\%$ $D\eta$ given by = $\eta - (x_1\eta_1 + x_2\eta_2)$
1 2 38 Ma 68 1: 107 Ti Cy 165-166 170 C, 204 C, 220 221 285 Pro	Tabl. of Ruhemann: t Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	-t and invert % % Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	η and σ (water=1), means water at the same t. x_1 and x_2 = moles $\%$ $D\eta$ given by = $\eta - (x_1\eta_1 + x_2\eta_2)$
2	Tabl. of Ruhemann: t Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	-t and invert % % Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	η and σ (water=1), means water at the same t. x_1 and x_2 = moles $\%$ $D\eta$ given by = $\eta - (x_1\eta_1 + x_2\eta_2)$
2	Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	at the same t. x_1 and x_2 = moles % $D\eta$ given by = $\eta - (x_1\eta_1 + x_2\eta_2)$
2	Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	x_1 and x_2 = moles % $D\eta \text{ given by = } \eta - (x_1\eta_1 + x_2\eta_2)$
2	Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	$D\eta$ given by = $\eta - (x_1 \eta_1 + x_2 \eta_2)$
2	Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	
2	Tabl. of Sage and Lacey: mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	Polystyrene (C ₈ H ₈)
38 Ma 68 I: 107 Ti Cy 165_166 170 C; 204 C; 220 221 285 Pre	mol % ac Milan sooctane mmermans (to be put on p. 112) clohexane + Benzene	Mac Millan 2,2,4-Trimethylpentane Cyclohexane + Toluene C ₁₆ H ₁₀	Polystyrene (C ₈ H ₈)
68 I: 107 Ti Cy 165_166 170 C, 204 C, 220 221 285 Pro	mmermans (to be put on p. 112) clohexane + Benzene	2,2,4-Trimethylpentane Cyclohexane + Toluene $C_{16}H_{10}$	Polystyrene (C ₈ H ₈)
68 I: 107 Ti Cy 165_166 170 C, 204 C, 220 221 285 Pro	mmermans (to be put on p. 112) clohexane + Benzene	Cyclohexane + Toluene	Polystyrene (C ₈ H ₈)
Cy 165_166 170 C ₁ 204 C ₁ 220 221 285 Pro	on p. 112) clohexane + Benzene	C ₁₆ H ₁₀	Polystyrene (C ₈ H ₈)
165_166 170 C, 204 C, 220 221 285 Pri	ьH ₁₀	C ₁₆ H ₁₀	Polystyrene (C_8H_8)
170 C, 204 C, 220 221 285 Pro			Polystyrene (C ₈ H ₈)
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220 221 285 Pro	81140	A 11	
221 285 Pr		C ₁₈ H ₃₈	Polos 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			Polyvinylchloride (C ₄ H ₃ Cl) Chlortoluene-p
	opylbromide	Propylenebromide	chioi toidene-p
292 Fo:	r Etard: % and f.t.	f.t. and %	
_	H ₁₈ 02	C _B H ₁ 40 ₂	
	H ₇ 0 ₂ C1	C ₃ H ₅ OC1	
	H _{1 0} 0	C ₈ H ₁₈ O	
	₇ H ₁₀₄ 0 ₉ H ₁₈ 0 ₂	C ₅₇ H ₁₀₄ 0 ₆	
- 6-	H ₇ 0 ₂ C1	$C_8H_{14}O_2$ C_3H_5OCI	
420	"	"	
474			Polyvinylacetate ($C_{\mu}H_{6}O_{2}$)
	08180 ₂	$C_{10}H_{18}O_{3}$	
	H ₂ 0 ₂ C1	C ₃ H ₅ OC1	
488 C ₁₄	₄ H ₁₄ O ₂	C, 4H, 202	

V٨	H	JME	. 1
70	ᆚ		

Pages	Instead of	Correct to	Add
502	C _{1.1} H _{1.1} 0	C ₁₁ H ₁₄ O ₂	
515	0111140	- 1114 · %	Polyvinylstyrene (C_8H_8)
531			Alkenes: $C_6H_{1,2}$ for the first three and $C_7H_{1,4}$ for the last three
	5-Methyl + hexene	Methy l-hexene	
533	•		Dimethyl_1,3_cyclopentane
606	C ₁₀ H ₁₆	C ₁₀ H ₁₂	
	p_Aminoacetanilide 70	p-Aminoacetanilide 248	
	•	p-Aminoethylacetanilide 70	
668	For Methyl chloride	correct the % to (100 - %)	
	+ Fenchone		
693	For Karr	invert order of b.t.	
701	C ₁₁ H ₁₇ 0Br	$C_{11}H_{15}O_{2}Br$	
729	C ₁₂ H ₂₂ O ₆	C12H18U6	
747			Fluorethene (C_2C1F_3) Butylphthalate ($C_{1.6}H_{2.2}O_4$)
			Butylsebacate ($C_{18}H_{34}O_4$)
836	C ₈ H ₁₆ 0	C 8H 1 4 0	
886	C11H2004	C ₉ H ₁₆ O ₄	
896	C ₁₂ H ₂₀ 0	C ₁₂ H ₂₀ O ₂	
906	$C_{11}H_{20}O_{4}$	C ₉ H ₁₆ O ₄	
911	C ₁ H ₂ gO ₂	C ₁₄ H ₂₂ O ₈	
914	C8H1605	C ₈ H ₁₆ O ₄	
	C ₁₄ H ₁₃ O ₂	C ₁₄ H ₁₂ O ₂	
969	C ₆ H ₁₀ O ₃	C 6H1 0O2	
995	Nitrotoluene	Nitrotoluene-o	
999	11	" -p	
1 02 3	$C_{1}_{\mu}H_{1}_{\mu}O_{2}N_{2}$	$C_{14}H_{10}O_{2}N_{2}$	
1038	C ₁₂ H ₂₀ 0	C ₁₂ H ₂₀ O ₂	
1182	Chloropromacetanilide	Chlorobromacetanilide	
1198	$C_{46}H_{50}O_{10}N_{4}$	CalHaaOaNa	
1246			Ethylnitrobenzoate_p
1256	C ₆ H ₁ 1O ₇ N ₃	C ₁₆ H ₁ , O ₇ N ₃	and the cropenzoater b

VOLUME II

	Instead of	Correct to	Add
131	Ethanol	Ethoxyethanol	
145	1,2-Dichlor-1-propanol	2,3-Dichlor-1-propanol	
220	0thmer,1928		
	% of L and V	(100 - %)(correct twice)	
238	C7H6O3	C ₈ H ₆ O ₃	
239	jellow	yellow	
28 3	ad b.t.	at b.t.	
284	1012 dyn/cm2	. 1012	
340	C12H12O2	C9H12O2	
418	Complex chloral +	Chloralmethyl tartrate ($C_cH_9O_6CI_3$)	
531	Taboury and Lestrade	The Fig. is erroneous	
570	C3H6O2	C4H605	
602	C ₁₆ H ₂₆ O ₆	C ₁₆ H ₈₆ O ₈	
649	C ₁₈ H ₁₈ O ₆	C ₁₈ H ₁₈ O ₅	
79 3	Collidine_2,4,5	Collidine-2,4,6	
909	• •		Dinitrophenol
1048			Malic acid 1
1134	C4H8O2	$C_{4}H_{8}O_{3}$	•
1142	C ₃ H ₂ ON	C ₃ H ₂ O ₂ N	
1218	•	- , ~	Dimethylglutaric acid d
1226			Mandelic acid d
1228			11 11 11
	VOLUME III		
232	$B_8Na_2O_{131}$	B ₄ NaO ₇	
466			Sodium-p toluene sulfonat
807	Wasif	Gillespie and Wasif	
817			25° to Gibson,1935
916	31255	31215	
1203	mol %	M	
1404	11	n	
	Scherer : %	c	
1204 1252			
	r KH ₆ O ₁₁ P	" KH ₂ O _L P	

ERRATA

VOLUME IV

Pages	Instead of	Correct to	Add
1	To H_2 + He and H_2 + D_2		(at room temperature)
)	C ₁₁ H ₁₄ O ₅	C ₁₁ H ₁₄ 0 ₂	
35			Dicyclohexylamine ($C_{12}H_{23}N$)
179			Strychnine tartrate ($C_{46}H_{50}O_1$
517	B ₁₀ H ₈ N ₂ O ₁₆	$B_5H_4NO_8$	4050- [
759	SC1 or SC1 ₂	S ₂ C1 ₂	
392	11 11	R	

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Notice for Users

1. Scope of the work

The data compiled refer only to binary systems, concentrated solutions.

As components, I have accepted all kinds of substances, elements or compounds, with the exception of metallic alloys, a category covered by many other books.

As concentrated solutions, I choose to consider arbitrarily systems between 10 and 90 per cent by weight; I left also out of consideration data relating to dilute solutions, if there is only one measure between 10 and 20 %.

All data, so far as possible, have been reproduced from the original publications, if available; in other cases, the actual source of the data is given in the bibliographic reference. Preference has been given to the experimental data, rather than to values interpolated from a formula; in many cases we had to read the data from graphs, with help of a grating (this is denoted by "fig").

2. General Plan

All data are classified by systems, since values of different properties may help to caracterise their physical nature.

The systems have been arranged in four categories, one for each volume of this book, as follows:

- A. Both components are organic compounds, excepting the hydroxyl derivatives.
- B. Both components are organic compounds, one at least being a hydroxyl derivative.
- C. One at least of the components is a metallic compound.
 - D. All other systems.

In that volume are also included the general table of bibliographic references and the general table by substances.

 $\ensuremath{\mathbf{I}}$ consider as non-metals the following twenty elements:

B - C,Si - N,P,As - 0,S,Se,Te - H,F,C1,Br,I - He,Ne,Ar,Kr,Xe

I call <u>non-metallic</u> compounds those with only these elements; and <u>organic</u> compounds all such compounds with at least one atom of C. As <u>metallic</u> compounds, I consider all those with at least one metallic atom. Ex.: CSi is an organic compound, sodium benzoate a metallic one, and HCl a non-metallic one.

3. Order of the systems

In each section, the binary mixtures are brought together in great divisions, according to the degree of physico-chemical similitude of their components; for ex., in the third volume, the first part deals with mixtures of two metallic salts, the second one with solutions of metallic salts in water and the third, with solutions of these salts in all other solvants, non-metallic or organic.

In each of these divisions, the binary mixtures are listed, according to the order of the first component, and, for each of them, according to the order of the second component; for ex., all systems with methane come first, methane + butane being listed before methane + benzene, since butane comes before benzene in my classification.

a) For organic compounds, the general order is: hydrocarbons, halogen derivatives, oxygen derivatives (excluding the hydroxyl ones), nitrogen, mixed oxygen and nitrogen derivatives, and last the hydroxyl derivatives of any kind.

In each of these groups, the aliphatic derivatives come first (saturated and then unsaturated), then the polymethylenes, the aromatic compounds and finally the heterocyclic ones.

The sulfur derivatives are listed after the corresponding oxygen ones, the phosphorus, after the nitrogen ones, the silicon and boron after the carbon ones. In each group, the derivatives produced by halogen substitution are placed at the end of the respective group; for ex., ethylenchlorhydrin comes at the end of the alcohol group.

In accordance with this rule, we have the following arrangement:

Hydrocarbons: paraffins, ethylenic and acetylenic hydrocarbons, polymethylenes and aromatic hydrocarbons.

Halogen derivatives: derivatives of the same hydrocarbon are grouped together, in order of the number of hydrogen atoms substituted by halogen atoms, fluorine derivatives first, then chlorine, bromine and iodine derivatives.

Oxygen derivatives: first the ether oxides, with open chain (ethyl ether) or closed ring (dioxane), the aldehydes and ketones, the anhydrides, and finally the esters.

Nitrogen derivatives: nitriles and amines.

Mixed Oxygen and Nitrogen derivatives: compounds of the amide type, and then nitroso- and nitro- derivatives.

Hydroxyl derivatives: first the alcohols and oximes, then the phenols and finally the acids.

N.B. The presence in the molecule of a chemical function listed later, relegates this compounds to the end of that category, for ex., acetoacetic esters come after the esters.

b) Metallic Compounds. Most of them are electronic compounds which are classified as fol-

The salts, oxides, sulfides, etc. come together, so long as the metal has the same electrovalency, for ex., the ferrous compounds are classified with nickel, cobalt, manganese ones. but the ferric compounds, with aluminum and chromic salts.

The metallic ions are classified in series of the same electrovalency, according to the periodical. table:

Li, Na, K, Rb, Cs, T1⁺ - Cu⁺, Ag, Au⁺, Hg⁺
Be, Mg, Ca, Ba, Sr, Sn⁺⁺, Pb⁺⁺ - Zn⁺⁺, Cd⁺⁺,
Hg⁺⁺, Cu⁺⁺, Mn⁺⁺, Fe⁺⁺, Ni⁺⁺, Co⁺⁺
A1, Ga, In, T1⁺⁺⁺, Cr⁺⁺⁺, Fe⁺⁺⁺, Rare: Earths

- Sb⁺⁺⁺, Bi⁺⁺⁺.

Ge, Ti, Th, Sn⁺⁺⁺⁺, Pb⁺⁺⁺⁺ - Uranyl.

For each metallic ion, the salts are arranged according to the valency of the anion and the oxygenated salts after all others, as follows:

fluorides, chlorides, bromides, iodides, cyanides, thiocyanates, etc.;

oxides, sulfides, selenides, etc. - nitrides, borides, carbides, silicides;

hydrates, thiohydrates - nitrites, chlorites... chlorates, bromates, iodates, nitrates; phosphites, arsenites; perchlorates - permanganates; phosphates, arsenates, etc.; carbonates, sulfites, metasilicates; sulfates, selenates, chromates, manganates; orthosilicates.

4. Order of the constants.

So far as possible, especially for systems where the data are particularly numerous, the order in which the properties are classified is as follows:

a) Heterogeneous equilibria:

Critical constants; saturates vapour pressure for the triphase equilibrium.

Vapour pressure curve; boiling curve and azeotropes.

Composition of liquid and vapour coexisting phases.

Densities of coexisting phases and rectilinear diameter.

Composition of the two liquid phases and eventually of the saturated vapour; critical solution point.

Freezing and melting curve; eutectic and transition points.

Equilibria of the condensed phases under high pressure.

b) Properties of phases: first for the gas. then the liquid and finally the mixed crystals:

Densities, coefficients of expansion and of compressibility.

Viscosity and surface tension.

Refractive index and optical dispersion. Dielectric constant; electrical conductivity. Optical rotatory power.

Magnetic rotation; magnetic susceptibility.

c) Thermal constants:

Specific heat; heat of solution or mixing. Heat of vaporization and fusion. Thermal conductivity.

5. Choice of units.

So far as possible, we have always used units of the c.g.s. system; when necessary, we have converted the original results into these units, so far as it did not involve the use of a coefficient whose value has changed sometimes. Ex: we could, without any ambiguity, transform specific volumes into densities, or density d_t^t into d_t^d ; but to transform molar concentration in weight concentration, if not made by the author himself, would have involved a somehow arbitrary choice of atomic weights.

All our numerical data have been taken as given in the original paper; we always gave priority to direct experimental results, rather than recalculated curves.

Here follow some additional details about the choice of units:

Viscosity: in poises . 10⁵ Surface tension: in dynes/cm

Temperature: t in centigrade; T = absolute temperature = t + 273.16

Pressure: p - in mm Hg; P - in atmospheres; ${\rm P}_{kg}$ - in ${\rm kg/cm}^2$

 π and τ represent pressure or temperature coefficient of the constant considered, which means its change by kg or by degree; but when it relates to volume changes, π and τ are coefficients of compressibility or expansion, as given by the formulae:

$$v_t = v_o$$
 . (1 + \tau.t) and $v_P = v_1$. (1 - \tau.P)

Specific heat: in calories / gram of mixture Heat of mixing, heat of vaporization, etc. - in calories / mole of mixture.

In case other units were exceptionally used, this is expressely stated in column headings.

N.B. Scientists of the whole world always agree to give their results in units of the metric system; only in Anglo-Saxon countries, did some authors give <u>also</u> their results in British

units, for the ease of their technicians. But in recent years some American physico-chemists, namely Sage and his co-workers, have published in Industrial and Engineering Chemistry some extensive tables of data on isotherms of mixtures of hydrocarbons, only in British units (°F, pressure in Lb/sq.in., etc.), without any corresponding tables in metric values, which makes them quite unsuitable for general use in other countries. We have made in most cases the necessary calculations to reproduce these data in metric units, but this work is so laborious and tedious that we were unable to give the complete data; and we wish to protest here with energy against this new mode of publication, which takes no notice of the international scientific public.

6. Nomenclature and bibliographical data.

A. Nomenclature.

Inside this work the common names of the substances are used, with their molecular formulae; but in the Table at the end of the 4th volume, they are classified in the same order as in the Chemical Abstracts, with the different synonyms. For ex., the compound we call ethylene chloride in the book itself, is also named: 1,2-dichlorethane, in the table.

B. Bibliographical data.

Inside the book, the data are reproduced under the name of their author, with the year of publication. The complete bibliographical reference is to be found in the alphabetical list of authors, at the end of this book.

For the transcription of Russian names, we have applied the rules used in Chemical Abstracts. But in case of a Russian author, all of whose quoted publications have been printed in Latin caracters, we have reproduced his name as he had it transcribed himself; when necessary, we give also in the list of authors, the alternative transcription of his name.

7. Symbols and abbreviations.

```
Rotatory power, for the
α
                 length = 10 cm
                 Specific rotatory power
(a)
(\alpha)^{mol}
                 Molar
(a)<sub>magn</sub>
                 Specific magnetic rotatory
                                          power
(a) mol magn
                 Molar
                 Dielectric constant
 £
                 Viscosity, in poises (.105)*
 'n
                 Specific conductivity (.104)
 ĸ
                 Equivalent conductivity
 λ
                 Pressure coefficient (.106)
 π
                 Surface tension, in dynes/cm
 σ
                 Temperature coefficient
 τ
                 Magnetic susceptibility (.10<sup>6</sup>)
 χ
                 (specific)
                 Crystal
 С
C.S.T.
                 Critical solution temperature
 C.V.T.
                          vaporization
                 Diffusion coefficient (.105)
 n
 \mathbf{D}_{\text{therm}}
                 Thermal diffusion coefficient
 D b.t.
                 Boiling temperature difference
 Df.t.
                 Freezing
 Dр
                 Pressure difference
 Dţ
                 Temperature
 Dv
                 Volume
 E
                 Eutectic
                 Liquid
 М
                 Molarity
 N
                 Normal concentration
 P
                 Pressure, in atmospheres
                            in kg/cm<sup>2</sup>
                 Heat of combustion (cal/gram
Q comb
                                            mixture)
Q dil
                         dilution (cal/mole
                                           mixture)
0 diss
                         dissolution
0 melt
                         fusion
0 mix
                         mixing
Q trans
                         transition
0 vap
                         vaporization
```

```
Resistivity
R
                 Solid
S
T
                 Absolute temperature
                 Specific heat (cal/gram
                                       mixture)
                 Vapour
v
                 Aqua, water
aq
                 Atmosphere
a tui
                 Boiling temperature
b.t.
                 g/100 cc solution
r
                 Cubic centimeter
СC
                 Calorie (small)
ca1
                 Critical
crit.
                 Density (t/4)
d
                 Dissociation
dissoc.
                 Electromotive force (in volts)
e
                 Freezing temperature
f,t.
                 Gram
g
                 Liter
1
                 Molality
                 Millimeter
mm
                 Milligram
mø
min
                 Minutes
                 Molar
mo1
                 Melting temperature
m.t.
                 Refractive index
                 Pressure in mm Hg
                 Saturation temperature
 sat.t.
                  (mutual solubility)
 sol.
                 Solution
                 Symmetrical
 s. or sym.
                 Temperature, centigrade
 tr.t.
                 Transition temperature
 trans.
                 Transition
 vol
                  Volume
v<sub>0</sub>.
                  Volume at 0%
                 Wave length (in Ångström unit)
 w.1.
%
                 Weight percent
                  Polymorphic forms
 I, II, etc.
 I - II
                  Transition of form I into
                  form II
```

^{*} The given powers for some units are systematically used in the Tables, unless otherwise stated.

____SYMBOLS AND ABBREVIATIONS_____

		D b.t.	Boiling temperature difference
α	Rotatory power, for the	D f.t.	Freezing " "
	length 10 cm	Dp	Pressure difference
(α)	Specific rotatory power	Dt	Temperature "
$(\alpha)^{mol}$	Molar " "	Dv	Volume "
(α) magn	Specific magnetic rotatory power	E	Eutectic
$(\alpha)_{mogn}^{mol}$	Molar " "	L	Liquid
· magn ε	Dielectric Constant	M	Molarity
	Viscosity, in poises (.10 ⁵)*	N	Normal concentration
η	4	P	Pressure, in atmospheres
и	Specific conductivity (.10 ⁴)	$P_{\mathbf{k}\mathbf{g}}$	" in kg/cm ²
λ	Equivalent conductivity	Q comb	Heat of combustion (cal/gram
π	Pressure coefficient (.10 ⁶)	•	mixture)
σ	Surface tension, in dynes/cm	Q dil	" dilution (cal/mole mixture)
τ	Temperature coefficient	0 diss	" dissolution "
X	Magnetic susceptibility $(.10^6)$ (specific)	Q melt	" fusion "
С	Crystal	Q mix	" mixing
C.S.T.	Critical solution temperature	Q trans	" transition "
C.V.T.	" vaporization "	Q vap	" vaporization "
D	Diffusion coefficient $(.10^5)$	R	Resistivity
D therm	Thermal diffusion coefficient	S	Solid

T	Absolute temperature	mol	Molar
U	Specific heat (cal/gram	m.t.	Melting temperature
v	vapour	n	Refractive index
aq atm b.t. c	Aqua, water atmosphere Boiling temperature g/100 cc solution Cubic centimeter	t	Pressure in mm Hg Saturation temperature (mutual solubility) Solution Symmetrical Temperature, centigrade
cal crit. d dissoc. e f.t.	Calorie (small) Critical Density (t/4) Dissociation Electromotive force (in volts) Freezing temperature Gram	tr. t. trans. vol vo w.l. % I,II,etc. I - II	Transition temperature Transition Volume Volume at 0% Wave length (in Ångström unit) Weight percent Polymorphic forms Transition of form I into
l m mm mg min	Liter Molality Millimeter Milligram Minutes	* The give	n powers for some units are ically used in the Tables, therwise stated.
			Statea.

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FORMULA INDEX

(Inorganic substances)

```
A
   Argon
       IV, 649, 650, 832, 833, 842, 844-846, 848-
           852, 879, 880
AgAuCl<sub>2</sub>
   Silver chloraurite
       III, 1228
AgBr
   Silver bromide
       111, 82, 84, 86, 87, 90, 91, 268, 269,
            271-273, 1258
AgCN
   Silver cyanide
       III, 104
AcC1
   Silver chloride
       111, 18, 19, 29, 30, 40-42, 50, 52, 54,
            57-62, 268-271, 1258, 1276
AgC10<sub>3</sub>
   Silver chlorate
       III, 151
AgC10<sub>h</sub>
   Silver perchlorate
       111, 699, 1037, 1042, 1124, 1132
AgF
   Silver fluoride
       III, 10, 689, 1243
AgH_{14}N_30_6
   Silver ammonium nitrate
       III, 699
```

```
AgI
   Silver iodide
      III, 96, 97, 99-101, 269-274, 1116, 1120,
            1123, 1136, 1258
AgNO<sub>3</sub>
   Silver nitrate
      111, 154, 161, 162, 165, 166, 169, 171-173,
            271, 273, 274, 690-698, 1035, 1110,
            1111, 1112, 1113, 1117, 1121, 1123,
            1124, 1131, 1132, 1136, 1205, 1259,
            1283
AgN206Tl
   Silver thallium nitrate
      III, 700
Ag<sub>2</sub>F<sub>6</sub>Ge
   Silver fluogermanate
      III, 1003
Ag2HgI4
   Silver-mercuriiodide
       111, 103
AgaMoO4
   Silver molybdate
       III, 202, 274
Ag204S
   Silver sulfate
       111, 188, 192, 196, 274, 1321
AgaOhW
   Silver tungstate
       III, 204, 271
```

```
Ag<sub>2</sub>S
                                                                  AlBr<sub>3</sub>ClNa
   Silver sulfide
                                                                     Aluminum sodium bromide
       III, 139, 140, 143, 270, 274, 1318, 1319
                                                                         III, 1148
Ag<sub>2</sub>Se
                                                                  AlBr<sub>3</sub>H<sub>2</sub>S
   Silver selenide
                                                                     Aluminum bromide . Hydrogen sulfide
       III, 146, 274
                                                                         111, 1038
Ag<sub>3</sub>AsS<sub>3</sub>
                                                                  AlBr<sub>3</sub>0<sub>9</sub>
   Proustite
                                                                     Aluminum bromate
       III, 274
                                                                         111, 970
Ag_3S_3Sb
                                                                  AlbR<sub>12</sub>K
   Pyrargyrite
                                                                     Aluminum potassium bromide
       III, 274
                                                                         III, 1149
AlBr<sub>3</sub>
                                                                  AlBr<sub>5</sub>Zn
    Aluminum bromide
                                                                      Aluminum bromide . Zinc bromide
        III, 83, 85, 86, 89-95, 298, 970, 1031,
                                                                          III, 1288
              1035, 1037, 1038, 1043, 1048, 1049,
                                                                  AlBr<sub>5</sub> . C<sub>2</sub>H<sub>5</sub>Br . CS<sub>2</sub>
              1059, 1060, 1061, 1063, 1065, 1074,
              1077, 1079, 1090, 1092, 1113, 1136,
                                                                          III, 1233
              1144, 1147, 1153, 1154, 1155, 1159,
                                                                  AlBr7 . CS2
              1160, 1161, 1233, 1274, 1279, 1285,
              1286, 1287, 1288, 1289, 1306
                                                                          III, 1234
AlBr<sub>3</sub> . SbBr<sub>3</sub>
                                                                  AlC13
   Aluminum antimonium tribromide
                                                                      Aluminum chloride
       III, 96, 1039, 1040, 1044, 1058, 1060,
                                                                          111, 22, 36, 37, 49, 57, 59, 62, 65, 70,
             1149, 1288
                                                                                74, 76-79, 213, 298, 966-969, 1037,
                                                                                1071, 1072, 1076, 1090, 1091, 1112,
AlBrs . ChH100
                                                                                1145, 1146, 1153, 1154, 1155, 1159,
   Aluminum bromide etherate
                                                                                1160, 1161, 1274, 1278, 1285, 1290
       III, 1056, 1074, 1233
                                                                                1298, 1305
                                                                   A1C1_3 . C_4H_{10}0
                                                                      Aluminum chloride etherate
                                                                          III, 1233
```

```
A1C1309
                                                               AlI<sub>3</sub>
    Aluminum chlorate
                                                                  Aluminum iodide
        III, 970
                                                                      III, 99-103, 1039, 1237, 1274, 1289, 1206
A1C13012
                                                               A11306
    Aluminum perchlorate
                                                                  Aluminum iodate
        III, 972
                                                                      III, 970
AlCl<sub>u</sub>Na
                                                               A1KO4Si
    Sodium chloraluminate
                                                                  Potassium aluminum orthosilicate
        III, 1072
                                                                      III, 207
A1C1<sub>8</sub>P
                                                               AlKO6Si2
    Aluminum phosphorus chloride
                                                                  Leucite
        III, 1149
                                                                      111, 208
AlCs08S2
                                                               AlKO<sub>8</sub>S<sub>2</sub>
   Cesium alum
                                                                  Potassium alum
       III, 976
                                                                      III, 212, 299, 975, 976
A1F3
                                                               A1N309
   Aluminum fluoride
                                                                  Aluminum nitrate
       111, 3, 5, 6, 8-10, 12
                                                                      III, 970, 971
AlF 6K3
                                                               AlNa02
   Potassium aluminum fluoride
                                                                  Sodium aluminate
       111, 13, 297
                                                                      III, 233
AlF<sub>6</sub>Na<sub>3</sub>
                                                               AlNaO<sub>h</sub>Si
   Sodium aluminum fluoride
                                                                  Sodium aluminum orthosilicate
       III, 13, 297
                                                                      III, 207, 208, 236, 237
   Cryolithe
       III, 298
                                                               AlOgSaT1
                                                                  Thallium alum
A1H_{14}N0_{8}S_{2}
                                                                      III, 212, 976
   Ammonium alum
       III, 299, 974
                                                               A10 aSaRb
                                                                  Rubidium alum
                                                                      111, 976
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AlNaO₆Si₂ Albite III, 208 Al₂BaCl₈ Barium chloraluminate III, 1072 AlaBa08Sia Barium aluminum orthosilicate III, 208 AlaBr6C1K Aluminum bromide potassium chloride complex III, 1038 AlaBr6ClLi Aluminum bromide-Lithium chloride complex 111, 1038 Al_2Br_6ClNa Aluminum bromide-sodium chloride complex III, 1038 Al2C12H24N6024 . 6H20 Ammonium aluminum oxalate III, 298 AlaC12Na6024 . 9H20 Sodium aluminum oxalate III, 298 AlaCaCla Calcium chloraluminate III, 1073 AlaCaOaSia Anorthi te III, 1313

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AlaCa306
   Calcium aluminate
      III, 150, 211
AlaCaOaSia
   Calcium aluminum orthosilicate
      111, 207, 208
AlaClaSr
   Strontium chloraluminate
      III, 1073
AlaMgOu
   Magnesium aluminate
      III, 150
AlaNaa016S4
   Sodium aluminum alum
      III, 975
A1203
   Aluminum oxide
      III, 114, 117, 119, 121, 122, 125, 127-131,
           134-137, 213, 298, 1317
AlaOhZn
   Zinc aluminate
      III, 150
A1206Sr3
   Strontium aluminate
      III, 150, 211
Ala09Si3
   Aluminum metasilicate
      III, 181
A12012S3
   Aluminum sulfate
      III, 972-974
```

```
AsH<sub>2</sub>NaO<sub>4</sub>
Al<sub>4</sub>C<sub>3</sub>
                                                                      Monosodium arsenate
   Aluminum carbide
                                                                           111, 409
       111, 298
                                                                   AsH<sub>3</sub>O<sub>4</sub>
A1_{4}0_{12}Si_{3}
                                                                       Arsenic acid
   Aluminum orthosilicate
                                                                           IV, 529
       111, 206
                                                                   AsI<sub>3</sub>
As
                                                                       Arsenic triiodide
    Arsenic
                                                                           111, 1289
       III, 1243
                                                                           IV, 758, 909, 910
       IV, 864, 876
                                                                   AsIn
AsBr<sub>3</sub>
                                                                       Indium arsenide
    Arsenic tribromide
                                                                           111, 299
        111, 1288, 1289
        IV, 756-758, 861, 906, 908, 909, 910
                                                                    AsK0<sub>3</sub>
                                                                       Potassium metaarsenate
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                                                                           111, 175
    Sodium arsanilate
        111, 469
                                                                    AsKa Ou
                                                                       Potassium orthoarsenate
AsC13
                                                                            111, 175, 572
    Arsenic trichloride
                                                                       Potassium arsenate
        III, 1287
                                                                            III, 1299
        IV, 753-756, 882, 910
                                                                    AsNa03
 AsCo
                                                                        Sodium metaarsenate
     Cobalt arsenide
                                                                            III, 175
        III, 147
                                                                    AsNa<sub>3</sub> O<sub>3</sub>
 AsHNa204
                                                                        Sodium orthoarsenate
     Disodium arsenate
                                                                            III, 175
         III, 408
                                                                        Sodium arsenate
 AsH<sub>2</sub>KO<sub>4</sub>
                                                                            111, 231, 408, 1299
     Potassium acid arsenate
                                                                    AsNi
         111, 572
                                                                        Nickel arsenide
                                                                            III, 147
```

```
As<sub>2</sub>K<sub>4</sub>O<sub>7</sub>
                                                                   AuCl<sub>k</sub>Li
   Potassium pyroarsenate
                                                                      Lithium chloraurate
       III, 176
                                                                          III, 966
AsaNau07
                                                                   AuC1<sub>14</sub>Na
   Sodium pyroarsenate
                                                                       Sodium chloraurate
       III, 176
                                                                          111, 966
Asa03
                                                                   AuCl<sub>u</sub>Rb
   Arsenious trioxide
                                                                       Rubidium chloraurate
       IV, 518
                                                                          III, 966
As205
                                                                   В
   Arsenic pentoxide
                                                                       Boron
       III, 1299, 1300
                                                                           IV, 686
As<sub>2</sub>S<sub>3</sub>
                                                                   BBr_3
   Arsenic trisulfide
                                                                       Boron tribromide
       III, 1318
                                                                           III, 1289
As<sub>2</sub>Se<sub>3</sub>
                                                                           IV, 908
   Arsenic triselenide
                                                                   BC_{4}H_{4}K0_{6}
       111, 1319
                                                                       Potassium boryl malate
AuCl<sub>2</sub>Cs
                                                                           III, 611
   Cesium chloraurite
                                                                   BChHkO2
       III, 1228
                                                                       Potassium boryl tartrate
AuCl<sub>2</sub>K
                                                                           III, 611
    Potassium chloraurite
                                                                   BC_{16}H_{24}KO_{12}
       III, 1228
                                                                       Potassium ethyl bortartrate
AuCl<sub>u</sub>Cs
                                                                           III, 1167
    Cesium chloraurate
                                                                   BC1<sub>3</sub>
       III, 966
                                                                       Boron trichloride
AuC1 hK
                                                                           IV, 750, 751, 883, 891, 908
    Potassium chloraurate
                                                                   BF_3
       III, 966
                                                                       Boron trifluoride
                                                                           IV, 747-749, 877, 879, 880, 891, 895, 903,
                                                                                905, 907, 908
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B4K207
BF_{14}H_{14}N
                                                                             Potassium tetraborate
    Ammonium fluoborate
                                                                                 III, 572
        IV, 627
                                                                         B4Na207
BH<sub>3</sub>O<sub>3</sub>
                                                                             Sodium tetraborate
    Boric acid
                                                                                  III, 176, 232, 233, 409, 410
        IV, 518, 519, 811, 812
                                                                         B<sub>5</sub>CsO<sub>8</sub>
BK02
                                                                             Cesium pentaborate
    Potassium metaborate
                                                                                  III, 684
        III, 150, 251, 257
                                                                          B<sub>5</sub>H<sub>4</sub>NO<sub>8</sub>
BLi 02
                                                                              Ammonium pentaborate
    Lithium metaborate
                                                                                  IV, 617
        III, 150, 215, 216, 219
                                                                          B<sub>5</sub>KO<sub>8</sub>
BNa02
                                                                              Potassium pentaborate
    Sodium metaborate
                                                                                  III, 572
        III, 150, 232, 400
                                                                          B<sub>5</sub>Na0<sub>8</sub>
B<sub>2</sub>BaF<sub>8</sub>
                                                                              Sodium pentaborate
    Barium fluoborate
        111, 828
                                                                          B<sub>5</sub>0<sub>8</sub>Rb
B<sub>2</sub>H<sub>6</sub>
                                                                              Rubidium pentaborate
    Diborane
                                                                                  III, 672
        IV, 745, 877, 891, 905
                                                                          Ba
B_{2}O_{3}
                                                                              Barium
    Boron oxide, Boric anhydride
                                                                                  III, 1243, 1261, 1262
        III, 1291-1297
                                                                          BaBr<sub>2</sub>
        IV, 518, 908, 912
                                                                              Barium bromide
 B<sub>4</sub>CaO<sub>7</sub>
                                                                                   III, 83, 85, 88, 91, 281, 822-825, 1170
    Calcium tetraborate
                                                                          BaCO<sub>3</sub>
         III, 176, 278
                                                                              Barium carbonate
B_{4}H_{8}N_{2}O_{7}
                                                                                   III, 178, 179, 282
    Ammonium diborate
                                                                          BaC2H2O4
         IV, 616
                                                                              Barium formate
                                                                                  III, 834, 1209
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BaCdaCl6
BaC2N2S2
                                                                    Dicadmium barium chloride
   Barium thiocyanate
                                                                        III, 882
       111, 828
                                                                BaC12
BaC_{4}H_{6}O_{4}
                                                                    Barium chloride
   Barium acetate
                                                                        III, 20, 33, 34, 44, 45, 51, 54, 63, 65,
       III, 835, 836, 1213
                                                                              66, 68-70, 280-282, 810-822, 1246,
BaC<sub>6</sub>H<sub>10</sub>O<sub>14</sub>
                                                                              1262
   Barium propionate
                                                                 BaCl204
       III, 836
                                                                    Barium chlorite
BaC 8H1404
                                                                        III, 829
   Barium butyrate
                                                                 BaCl206
       III, 837
                                                                    Barium chlorate
BaC 1 0H 1 804
                                                                        III, 830, 831
   Barium valerate
                                                                 BaCl<sub>2</sub>0<sub>8</sub>
       111, 837
                                                                    Barium perchlorate
   Barium trimethylacetate
                                                                        III, 833
       III, 837
                                                                 BaF2
BaC12H1006S2
                                                                     Barium fluoride
   Barium benzenesulfonate
                                                                        III, 3, 4, 7, 11, 12, 280, 281
       111, 837
                                                                 BaH202
BaC12H1008S2
                                                                     Barium hydroxide
   Barium phenolsulfonate
                                                                        III, 828
       III, 837
                                                                 BaH<sub>2</sub>0<sub>8</sub>S<sub>2</sub>
BaC 12 H2204
                                                                     Barium acid sulfate
   Barium caproate
                                                                         111, 834
       III, 837
   Barium methyl_3_valerate
                                                                 BaH<sub>2</sub>S<sub>2</sub>
       111, 837
                                                                     Barium thiohydrate
   Barium methyl-2-valerate
                                                                         III, 829
       III, 837
                                                                 BaH4N2O6S2
BaCdC1<sub>14</sub>
                                                                     Barium sulfamate
   Cadmium barium chloride
                                                                          111, 833
        III, 882
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Balz
                                                               Ba06S2
   Barium iodide
                                                                   Barium dithionate
       III, 281, 826, 827, 1186, 1305
                                                                       III, 834
BaN20h
                                                                BaS
   Barium nitrite
                                                                   Barium sulfide
       III, 829
                                                                       III, 282
BaN206
                                                                Ba203
                                                                   Barium sesquioxide
   Barium nitrate
       III, 154, 163, 168, 170, 171, 174, 832,
                                                                       III, 108, 112
             833, 1262, 1283
                                                                Ba<sub>2</sub>0<sub>k</sub>Si
                                                                   Barium orthosilicate
Ba0
                                                                       III, 207
   Barium oxide
       III, 115, 118, 121, 122, 282, 828, 1294,
                                                                Ba<sub>3</sub>0<sub>8</sub>P<sub>2</sub>
                                                                    Barium orthophosphate
                                                                       III, 281, 282
Ba0<sub>3</sub>Si
   Barium metasilicate
                                                                BeBra
       III, 180-184, 281-283
                                                                    Beryllium bromide
Ba03Sn
                                                                       III, 700
    Barium metastannate
                                                                BeC1<sub>2</sub>
       III, 186, 283
                                                                    Beryllium chloride
BaO<sub>3</sub> Ti
                                                                        111, 19, 30, 54, 59, 63, 700
   Barium titanate
       III, 185, 186, 283
                                                                BeCla08
                                                                    Beryllium perchlorate
Ba03Z2
                                                                        III, 701
   Barium metazirconate
       III, 283
                                                                 BeF<sub>2</sub>
                                                                    Beryllium fluoride
Ba04S
                                                                        III, 1, 2, 4, 7, 11
   Barium sulfate
      111, 189, 194, 198, 282, 1322
                                                                 BeF<sub>h</sub>Na
                                                                    Sodium fluoberyllate
                                                                        III, 13
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BiF<sub>3</sub>
 BeF4Rb2
                                                                   Bismuth fluoride
     Rubidium fluoberyllate
                                                                       III, 300
        III. 13
 BeI206
                                                                BiN<sub>3</sub>0<sub>9</sub>
                                                                   Bismuth nitrate
    Beryllium iodate
                                                                       III, 174
        III, 701
                                                                Bi2C20H26I804N2
 BeI208
                                                                    Quinine iodobismuthate
    Beryllium periodade
                                                                        111, 1088
        III, 701
                                                                Bi 2 MO 3 O 1 2
 BeK2Fh
                                                                    Bismuth molybdate
    Potassium fluoberyllate
                                                                        III, 203
        III, 260
BeN206
                                                                 Bi 203
                                                                    Bismuth trioxide
    Beryllium nitrate
                                                                        111, 124, 126, 300
       III, 701
                                                                 Bi2012S3
Be0
                                                                    Bismuth sulfate
   Beryllium oxide
                                                                        III, 211
       III, 114, 115
                                                                 Bi2012W3
Be0<sub>h</sub>S
                                                                     Bismuth tungstate
   Beryllium sulfate
                                                                        III, 205
       III, 196, 702, 703
                                                                 Bi<sub>2</sub>Se<sub>3</sub>
Вi
   Bismuth
                                                                     Bismuth selenide
       III, 1229, 1230, 1234, 1237, 1242
                                                                        III, 146, 300
BiBr_3
                                                                 Bi<sub>2</sub>Te<sub>3</sub>
   Bismuth bromide
                                                                     Bismuth tritelluride
       III, 94, 95, 96, 1146, 1156, 1289
                                                                         III, 300
BiC18H15
                                                                 Br
   Triphenyl bismuth
                                                                     Bromine
       111, 106, 1139
                                                                         IV, 854, 859-861, 883-885
BiC1<sub>3</sub>
   Bismuth chloride
       111, 57, 59, 72, 77, 79
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BrK
                                                        BrC4H7KO2
   Potassium bromide
                                                            Potassium brombutyrate
      III, 81, 83, 86-89, 245, 247, 248, 254,
                                                               III, 610
           255, 505-519, 1141, 1201, 1208, 1246,
                                                        BrCs
           1256, 1301
                                                            Cesium bromide
BrK03
                                                               III, 265, 679, 680, 1228, 1235
   Potassium bromate
                                                         BrCu
      III, 552
                                                            Cuprous bromide
BrLi
                                                               III, 86, 90, 267, 268, 1257
   Lithium bromide
                                                         BrF<sub>3</sub>
      III, 81-83, 215, 216, 218, 628-634, 1083,
                                                            Bromine trifluoride
            1102, 1107, 1130, 1163, 1177, 1200,
                                                               111, 1286
            1207, 1248
                                                               IV, 883, 906
BrLi03
                                                         BrF 5
   Lithium bromate
                                                            Bromine pentafluoride
      III, 644
                                                               III, 1290
BrNa
                                                               IV, 890, 906
   Sodium bromide
                                                         BrH
      III, 81, 83-86, 221, 224, 228, 229, 342-
                                                            Hydrobromic acid
            352, 1141, 1163, 1200, 1201, 1208,
                                                               IV, 460-465, 713-717, 891, 893
            1232, 1246, 1252
                                                         BrH<sub>11</sub>N
BrNa0.
                                                            Ammonium bromide
   Sodium bromate
                                                               III, 1279
      III, 233, 384
                                                               IV, 594-596, 825, 882, 885, 898-900, 922
BrRb
                                                         BrHg
   Rubidium bromide
                                                            Mercurous bromide
       III, 81, 83, 86, 90, 664-666, 1203, 1204,
                                                               III, 91
            1227, 1256
                                                         BrI
BrS, BraSa
                                                            Iodine monobromide
   Sulfur bromide
                                                               III, 1285, 1286
       III, 1286
       IV, 906
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BrT1
 BraMg
                                                                Thallium bromide
    Magnesium bromide
                                                                    III, 86, 90, 266, 686
        III, 82, 84, 87, 91, 715-717, 1075, 1076,
             1078, 1082, 1086, 1093, 1125, 1128,
                                                             Br_2
             1134, 1142, 1143, 1167, 1193, 1195,
                                                                Bromine
             1197, 1198, 1209, 1212, 1259
                                                                    III, 1232-1235
                                                                    IV, 438, 652-658, 841, 861
 Br2MgC12H3606
    Magnesium bromide alcoholate
                                                             Br<sub>2</sub>Ca
        III, 1181
                                                                Calcium bromide
                                                                   III, 82, 84, 87, 91, 277, 770-772, 1168,
 Br2Mg06
                                                                         1184, 1193, 1194, 1196, 1197, 1198,
    Magnesium bromate
                                                                         1199, 1204
        111, 719
                                                            Br<sub>2</sub>Cd
Br<sub>2</sub>Mn
                                                                Cadmium bromide
    Manganese bromide
                                                                   III, 85, 88, 90-93, 292, 293, 872-875,
       111, 94, 923, 1119, 1121, 1268
                                                                         1117, 1125, 1171, 1186, 1187, 1264
Br<sub>2</sub>Ni
                                                            BraCo
    Nickel bromide
                                                                Cobalt bromide
       III, 946, 1120, 1122, 1123, 1175, 1271
                                                                   III, 958, 1088, 1119, 1122, 1176, 1191,
Br206Sr
                                                                         1269, 1270
    Strontium bromate
       III, 803
                                                            Br2CrNO3
                                                                Chromic nitrate dibromide
Br<sub>2</sub>0<sub>6</sub>Zn
                                                                   III, 1274
   Zinc bromate
       111, 846
                                                            Br<sub>o</sub>Cu
                                                                Cupric bromide
Br<sub>2</sub>Pb
                                                                   III, 903, 1118, 1267
   Lead bromide
                                                            Br<sub>2</sub>Fe
       III, 83, 85, 88, 90, 93, 94, 284-286, 288,
                                                                Ferrous bromide
            289, 740, 1262
                                                                   III, 297, 933, 934, 1119, 1269
Br<sub>2</sub>Sn
   Stannous bromide
                                                            Br<sub>2</sub>Hg
                                                                Mercuric bromide
      111, 93
                                                                   III, 85, 88, 92, 93, 293, 295, 896, 1126,
                                                                         1138, 1154, 1174, 1191, 1194, 1214,
                                                                         1242, 1279
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Br,Mg

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Br_2Sr
                                                           Br_3Sb
   Strontium bromide
                                                              Antimony tribromide
      III, 82, 84, 87, 797-799, 1169, 1185, 1186
                                                                  III, 93-95, 213, 299, 300, 1035, 1036,
                                                                        1039, 1044-1056, 1061, 1063-1068,
Br<sub>2</sub>Zn
                                                                        1079, 1081, 1083, 1089-1092, 1113,
   Zinc bromide
                                                                       1115, 1127-1129, 1144, 1146, 1151-
      III, 91, 92, 843, 844, 1076, 1086, 1117,
                                                                       1153, 1155-1158, 1204, 1205, 1215,
            1125, 1127, 1129, 1130, 1170, 1214,
                                                                       1220, 1221, 1223
            1263
                                                                  IV, 861, 906, 909, 910
Br<sub>3</sub>CdK
                                                           Br_3Y
   Cadmium potassium bromide
                                                               Yttrium bromide
      III, 883
                                                                  III, 980
Br 3 CdNH1
                                                           BruCl3P
   Cadmium ammonium bromide
                                                               Phosphorus trichloride tetrabromide
      III, 882
                                                                  IV, 752
Br3CdRb
                                                           Br<sub>1</sub>Ge
   Cadmium monorubidium bromide
                                                               Germanium tetrabromide
      III, 883
                                                                   IV, 911
                                                           Br_hSi
Br_3Cr
                                                               Silicium tetrabromide
   Chromic bromide
                                                                  IV, 765
      III, 998, 1274
                                                           Br<sub>b</sub>Sn
Br<sub>3</sub>Fe
                                                               Stannic tetrabromide
   Ferric bromide
                                                                  111, 95, 96, 300, 301, 1005, 1041, 1078,
      III, 1275
                                                                        1094, 1096, 1097, 1100, 1102, 1104-
Br<sub>3</sub> In
                                                                        1107, 1114, 1150, 1156, 1162, 1192,
   Indium bromide
                                                                        1206, 1216, 1221, 1286, 1287, 1289,
      111, 982, 983
                                                                        1307
Br_3P
                                                           Br_{\mu}Ti
   Phosphorus tribromide
                                                               Titanium tetrabromide
      111, 1287
                                                                  III, 1306
      IV, 752, 886, 909
                                                           Br_5P
                                                              Phosphorus pentabromide
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IV, 884, 886, 906, 910

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Br6CdRb4
   Cadmium tetrarubidium bromide
        III, 883
Br<sub>6</sub>H<sub>8</sub>N<sub>2</sub>Pt
    Ammonium platinum bromide
        III, 1279
Br<sub>6</sub>H<sub>8</sub>N<sub>2</sub>Sn
    Ammonium stannic bromide
        III, 1279
Br 8Cd3Na2
    Cadmium sodium bromide
Br<sub>6</sub>H<sub>8</sub>N<sub>2</sub>Se
    Ammonium selenium bromide
        III, 1279
Br gC13P
    Phosphorus trichloride octabromide
        IV, 753
Br<sub>18</sub>Cl<sub>3</sub>P
    Phosphorus trichloride octodecabromide
        IV, 753
c
    Carbon
        IV, 686, 859
CCa03
     Calcium carbonate
         111, 176, 178, 279
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CCeHO2
   Cesium formate
      III, 684
CCsNS
   Cesium thiocyanate
      III, 1304
CCs_2O_3
   Cesium carbonate
       111, 264, 1070
CCuN
   Cuprous cyanide
       111, 103, 104
CFe0<sub>3</sub>
   Ferrous carbonate
      III, 178
CHKO2
   Potassium formate
      111, 588, 1209
СНКО з
   Potassium acid carbonate
      111, 579, 580
CHLi02
   Lithium formate
       111, 656, 1207
CHNa02
   Sodium formate
       111, 229, 234, 239, 445, 446, 1208, 1210
CHNa03
   Sodium acid-carbonate
       III, 420, 421
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CHO2Rb
                                                              CLINS
   Rubidium formate
                                                                  Lithium thiocyanate
       III, 672
                                                                     III, 640
CH3KOLS
                                                              CLi<sub>2</sub>0<sub>3</sub>
   Potassium methyl sulfate
                                                                  Lithium carbonate
       III, 609
                                                                     III, 176, 215, 219, 220
CH<sub>3</sub>Na0
                                                               CNNa
   Sodium methylate
                                                                  Sodium cyanide
       III, 1165
                                                                      111, 103, 104, 225
CH<sub>5</sub>NO<sub>3</sub>
                                                              CNNaS
   Ammonium hydrogen carbonate
                                                                  Sodium thiocyanate
       IV, 617
                                                                      III, 105, 229, 230, 361-363, 1085, 1165,
                                                                            1179, 1301
CHf
   Hafnium carbide
                                                               CNRbS
       III, 148
                                                                  Rubidium thiocyanate
                                                                     111, 105, 1204
CKN
   Potassium cyanide
                                                               CNa203
       III, 103, 104, 251, 536
                                                                  Sodium carbonate
                                                                      III, 176-178, 222, 228, 231, 232, 233, 236,
CKNO
                                                                           237, 412-420, 1069
   Potassium cyanate
       III, 537
                                                              CNb
                                                                  Niobium carbide
CKNS
                                                                     III, 1408
   Potassium thiocyanate
       III, 105, 256, 537-540, 1085, 1110, 1131,
                                                              CO<sub>3</sub>Rb<sub>2</sub>
             1140, 1144, 1166, 1303
                                                                  Rubidium carbonate
                                                                      111, 263, 1070
CK_2O_3
   Potassium carbonate
                                                              CO<sub>3</sub>Sr
       III, 176-178, 214, 245, 251, 257, 258, 260,
                                                                  Strontium carbonate
             573-579, 1069
                                                                     III, 178, 179
CK<sub>2</sub>S<sub>3</sub>
                                                              CO3 T12
    Potassium thiocarbonate
                                                                  Thallium carbonate
       III, 582
                                                                     III, 267, 687
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СТа C2CdN2S2 Cadmium thiocyanate Tantalum carbide III, 147, 148 III, 1137 CaClH5Hg Ethylmercuric chloride Titanium carbide III, 1135 III, 147, 148, 214 CW C2Cl2HNaO2 Sodium dichloracetate Tungsten carbide 111, 464 III, 148 CZr C2Cl3Li02 Lithium trichloracetate Zirconium carbide III, 659 III, 147, 148 C2Cl3NaO2 CaCa Sodium trichloracetate Calcium carbide III, 464 III, 278 C2CoN2S2 C2CaH2O1 Cobalt thiocyanate Calcium formate III, 959, 1138, 1144 III, 785, 786 C2CsH3O2 C2CaK2O6 Potassium calcium carbonate Cesium acetate III, 684 III, 179 C2Cs2H6O20Te C2CaN2S2 Cesium telluroxalate Calcium thiocyanate III, 685 III, 774, 1305 C2HKO4 C2CaNa206 Potassium acid oxalate Sodium calcium carbonate 111, 598 III, 179 CaHNa306 C2CdH2On Sodium sesquicarbonate Cadmium formate III, 421 III, 894

 $C_2H_2MgO_4$ $C_2H_5K0_4S$ Magnesium formate Potassium ethyl sulfate 111, 739 111, 609 CaHaNiO6 CaH5Na0 Nickel bicarbonate Sodium ethylate 111, 1179 III, 1273 C2H2OuSr CaH5NaOuS Strontium formate Sodium ethylsulfate III, 465 III, 808 $C_2H_2O_4Zn$ C2H6K2O10Te Zinc formate Potassium acid oxalotellurate III, 865 III, 610 CaHaKOa CaH6MoO4 Potassium acetate Dimethyl molybdate III, 209, 263, 589-593, 1167, 1180, 1211, III, 1027 CaH6010RbaTe CaHaKOu Rubidium telluroxalate Potassium acid formate III, 672 111, 588 C_2HgN_2 C2H3LiO2 Mercuric cyanide Lithium acetate 111, 1126, 1135, 1138, 1266 111, 209, 219, 657, 1210 C2K2On C2H3NaO2 Potassium oxalate Sodium acetate III, 596-598 III, 209, 229, 234, 239, 240, 447₋451, 1208, $C_2K_2O_5$ 1210, 1211 Potassium sesquicarbonate CaHaOaRb III, 579 Rubidium acetate C2N2NiS2 111, 672, 673 Nickel thiocyanate C2H3O2T1 III, 1138, 1271 Thallium acetate III, 688

 $C_2N_2S_2Zn$ Zinc thiocyanide 111, 1137 C_2N_2Zn Zinc cyanide III, 104 C3H2K2O4 Potassium malonate III, 598 $C_3H_5KO_2$ Potassium propionate III, 593 $C_3H_5KO_3$ Potassium lactate III, 599 Potassium_d_lactate 111, 1180 CaHsLiOa Lithium lactate III, 658 CaHsNaOa Sodium propionate 111, 230, 234, 451, 452 C3H5NaO3 Sodium lactate III, 457 Sodium_1-lactate III, 1180 C3H9ISn Trimethyltin iodide

III, 1127

ChCaH60h Calcium acetate 111, 786, 787 CuCdH604 Cadmium acetate 111, 209, 894 $C_{\mu}CdHgN_{\mu}S_{\mu}$ Cadmium_mercuric thiocyanate III, 105 $C_{4}CdK_{2}N_{4}$ Potassium-cadmium cyanide III, 104 $C_{\mu}CoHgN_{\mu}S_{\mu}$ Cobalt-mercuric thiocyanate 111, 105 $C_{4}CuH_{6}O_{4}$ Cupric acetate III, 919 $C_h H_2 Na_2 O_h$ Sodium fumarate III, 462 Sodium maleate III, 462 C4H3KO8 Potassium hemiacid oxalate III, 596 C4H4KNaO6 Sodium-potassium tartrate III, 244, 604_606 $C_h H_h K O_6 T 1$ Thallium potassium tartrate

 $C_4H_4K0_7Sb$ Potassium antimonyl tartrate 111, 611 $C_h H_h K_2 O_h$ Potassium succinate III, 598, 599 $C_{4}H_{4}K_{2}O_{5}$ Potassium malate III, 599 $C_{\mu}H_{\mu}K_{2}O_{6}$ Potassium tartrate III, 600-602 ChHhLiOsT1 Thallium lithium tartrate III, 689 ChHuLia05 Lithium malate 111, 658 ChHuLi206 Lithium tartrate III, 658 $C_{\mu}H_{\mu}NNa0_{2}$ Sodium methyl cyanacetate III, 1165 $C_{4}H_{4}NaO_{6}Rb$ Sodium rubidium tartrate III, 209 ChHhNaO6T1 Thallium sodium tartrate III, 689

C_hH_hNa₂O_h Sodium succinate III, 457 $C_{4}H_{4}Na_{2}O_{5}$ Sodium malate 111, 458 $C_{4}H_{4}Na_{2}O_{6}$ Sodium tartrate III, 459₋461 $C_{14}H_{14}O_{14}Rb_{2}$ Rubidium tartrate III, 673 C4H5LiO5 Lithium acid malate III, 658 CaHsKOs Potassium acid malate 111, 599 ChH5NaOh Sodium acid succinate III, 457 C4H5NaO5 Sodium acid malate III, 458 C4H5NaO6 Sodium acid tartrate III, 461 $C_h H_6 Hg O_h$ Mercuric acetate III, 896

 $C_{14}H_6MgO_{14}$

Magnesium acetate III, 739

 $C_4H_6MnO_4$ Manganese acetate III, 932 CuH6NiOu Nickel acetate III, 1124, 1214, 1273 $C_{\mu}H_{6}O_{\mu}Pb$ Lead acetate III, 746, 747, 1213 $C_{4}H_{6}O_{4}Sr$ Strontium acetate 111, 808, 809 $C_{\mu}H_{6}O_{\mu}Zn$ Zinc acetate III, 865 C4H2KO2 Potassium butyrate 111, 263, 594 Potassium isobutyrate III, 594 C4H7NaO2 Sodium butyrate III, 230, 234, 239, 240, 241, 452, 1216 Sodium isobutyrate III, 230, 234, 239-242, 452 CuHaNNaO6 Sodium ammonium tartrate III, 209, 244, 461 C4H8NO6T1 Thallium ammonium tartrate III, 689

 $C_{4}HgN_{2}S_{2}$ Mercuric thiocyanate III, 1174 $C_{14}HgK_{2}N_{14}$ Potassium-mercuric cyanide III, 104 $C_{u}K_{z}N_{u}Pt$ Potassium cyanoplatinite III, 965 $C_{11}K_{2}N_{11}Zn$ Potassium_zinc cyanide III, 104 CuLiaNuPt Lithium cyanoplatinite III, 965 C5FeO5 Iron pentacarbonyl III, 1042 C5H2KO6 Potassium methyl tartrate III, 603 C5H9KO2 Potassium valerate and isovalerate 111, 594 C5H9NaO2 Sodium valerate III, 230, 235, 452, 453 Sodium isovalerate III, 230, 235, 239-242

C5H1,KO4S Potassium amyl sulfate III, 609 C6CaH1004 Calcium propionate III, 787 $C_6CaH_{10}O_6$ Calcium lactate 111, 789, 1169 C6Ca2FeN6 Calcium ferrocyanide III, 937 C6C1H4NaO3S Sodium p-chlorbenzene sulfonate III, 466 C6Cl2H7NZn α -Picoline zinc chloride III, 864 / _Picoline zinc chloride 111, 1176, 1192, 1195, 1197, 1199, 1204 C6ClaCoH2hN6 Tris-ethylenediamine cobalt chloride III, 965 $C_6C1_4H_{84}N_6Pt$ Tris_ethylendiamine_platinum chloride 111, 1004 C6FeH6K4 Potassium ferrocyanide 111, 934, 936 C6FeK3N6 Potassium ferricyanide

111, 977-979

C6FeN6Nau Sodium ferrocyanide III, 934 C₆FeN₆Sr₂ Strontium ferrocyanide III, 937 C6H5K307 Potassium citrate III, 607 C6H5NaO3S Sodium benzene sulfonate 111, 465, 466 C6H5NaO4S Sodium p-hydroxybenzene sulfonate III, 468, 469 C6H5Na3O7 Sodium citrate III, 462 C6H6NNaO3S Sodium-p-aniline sulfonate III, 467, 468 C6H6Na207 Disodium citrate 111, 462 C6H7NaO7 Monosodium citrate III, 462 C6H9KO6 Potassium ethyl tartrate

111, 603

```
CyH5KO2
 C<sub>6</sub>H<sub>9</sub>NaO<sub>3</sub>
                                                               Potassium benzoate
    Sodium ethylacetoacetate
                                                                   111, 608
       III, 1179
C6H1, KO2
                                                            C7H5KO3
                                                               Potassium hydroxybenzoate o, m and p
    Potassium caproate
                                                                   111, 608
       III, 263
                                                            C7H5LiO2
C6H, 1KO6
                                                               Lithium benzoate
   Potassium saccharinate
       111, 609
                                                                   111, 658
                                                            C7H5LiO3
C6H11NaO2
                                                               Lithium salicylate
   Sodium caproate
                                                                  III, 658
       III, 230, 235, 240-242, 453
C6H1, NaO6
                                                               Lithium hydroxybenzoate m and p
                                                                  III, 659
   Sodium saccharinate
       III, 462
                                                            C2H5NaO2
                                                               Sodium benzoate
C6H11O6Rb
                                                                  III, 240, 241, 242, 244, 463
   Rubidium saccharate
       111, 673
                                                            C7H5NaO3
                                                               Sodium salicylate
C7CsH502
                                                                  III, 463
   Cesium benzoate
                                                               Sodium hydroxybenzoate m and p
      111, 685
                                                                  III, 463
C7CsH503
                                                            C2H502Rb
   Cesium salicylate
                                                               Rubidium benzoate
      III, 685
                                                                  III, 673
   Cesium oxybenzoate m and p
      III, 685
                                                            C_7H_5O_3Rb
                                                               Rubidium salicylate
C_7H_4KN_5O_9
                                                                  III, 673
   Potassium salt of trinitroxyphenylmethylnitra-
   mine
                                                               Rubidium hydroxybenzoate m and p
      III, 609
                                                                  111, 673
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C7H7KO3S
                                                         CaHaNaOa
   Potassium-p-toluene sulfonate
                                                            Sodium phenylacetate
      111, 610
                                                                111, 1093, 1108, 1221, 1222
C7H7LiO3S
                                                         CaHyOaRb
   Lithium_p_toluenesulfonate
                                                            Rubidium phenylacetate
      III, 660
                                                                III, 1222
C7H7NaO3S
                                                         CaH11NaNaO3
   p-Toluene sulfonate
                                                            Sodium diethylbarbiturate
      111, 466, 467
                                                                III, 465
C2H11KO6
                                                         C 8H 1 5KO 2
   Potassium propyl tartrate
                                                            Potassium caprylate
      111, 603, 604
                                                                111, 594
C2H13NaO2
                                                         CaH15NaO2
   Sodium heptanoate
                                                            Sodium caprylate
      III, 453
                                                                111, 453
CaCaH<sub>10</sub>O<sub>10</sub>
                                                         C8K4MoN8
   Calcium acid malate
                                                            Potassium octacyanomolybdate
       III, 789
                                                                111, 1027
CaCaH1404
                                                         C9H17NaO2
   Calcium butyrate and isobutyrate
                                                            Sodium pelargonate
       111, 788
                                                                111, 454
CgH4Na204
                                                         CtoCaHtaOu
    Sodium phtalate o and m
                                                            Calcium isovalerate
       III, 464
                                                                111, 789
                                                            Calcium methylethylacetate
C8H7KO2
                                                                111, 789
    Potassium phenylacetate
       III, 1222
                                                         C10FeH12N6
                                                            α-Tetramethyl ferrocyanide
CaH,LiO2
                                                                III, 937
    Lithium phenyacetate
       111, 1093, 1221
                                                         C10H19NaO2
                                                            Sodium caprinate
                                                                III, 454
```

C12CaH2204 Calcium caproate III, 789 Calcium methylpropylacetate III, 789 Calcium diethylacetate III, 789 C12CdH1006S2 Cadmium benzene sulfonate III. 894 C12COH10O6S2 Cobalt benzenesulfonate 111, 965 C12CuH1006S2 Cupric benzene sulfonate 111, 919 C12H10Hg Diphenylmercury 111, 106 $C_{12}H_{10}Mg0_6S_2$ Magnesium benzenesulfonate III, 739 $C_{12}H_{10}Mn0_6S_2$ Manganese benzene sulfonate III, 932 C12H10NiO6S2 Nickel benzenesulfonate III, 955 C12H10NiO8S2

Nickel p-phenolsulfonate

111, 955

C, 2H1006S2Zn Zinc benzene sulfonate III, 865 C12H17NaO3 Sodium methyl camphorcarbonate III, 1165 $C_{12}H_{23}KO_{2}$ Potassium laurate III, 263, 595, 1217 C12H23NaO2 Sodium laurate III, 243, 454 C12H25K03S Potassium dodecylsulfonate 111, 610 C12H25LiO3S Lithium dodecylsulfonate III, 660 C12H25NaO4S Sodium dodecyl sulfate III, 465 $C_{12}H_{28}Sn$ Tin tetraisopropyl 111, 1036, 1041, 1058 C12K6012 Potassium mellate III, 609 C13H19NaO3

Sodium ethyl camphorcarbonate

C 14H27KO2 Potassium myristate III, 595 C14H27NaO2 Sodium myristate III, 243, 454, 455 CahHazBrzMgOh Magnesium bromide . Ethyl orthoformate III, 1104 C16H25NaO3 Sodium amyl camphorcarbonate III, 1198 C16H31K02 Potassium palmitate 111, 595 C16H31Li02 Lithium palmitate III, 658 C16H31NaO2 Sodium palmitate III, 243, 244, 455, 1032, 1033, 1034, 1097, 1122, 1141, 1179, 1195, 1199, 1202, 1206, 1211, 1217, 1218 C18H15Sb Triphenylstibine 111, 106, 1139 C18H33KO2 Potassium oleate 111, 263, 595, 1181, 1218 C18H33NaO2 Sodium oleate III, 244, 456, 457

C18H35K02 Potassium stearate 111, 595 C₁₈H₃₅NaO₂ Sodium stearate III, 241-244, 457, 1032, 1033-1036, 1042, 1045, 1046-1048, 1050, 1218 $C_{1.8}H_{3.5}O_{2}Zn$ Zinc stearate III, 1199 C18H36I2MgO12 Magnesium iodide etherate 111, 1096, 1097 C₁₉H₃₀NNaO₅S Sodium 1-lauro-4-anisidine-2 sulfonate III, 469 CaoHiaI6NaNaa06 Disodium salt of adipin-bis 2,4,6-triiod-3carboxyanilide III, 468 C20H3804Zn Zinc decoate 111, 1043, 1049 CaaHuaNaOa Sodium behenate III, 244 C23H38NNaO5S Sodium 1-palmito-4-anisidine-2 sulfonate III, 469 CanHaoGe Tetraphenyl germanium III, 1056, 1140

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CauHaoPb
    Tetraphenyllead
       111, 106, 1056, 1140
Ca4H20Sn
    Tetraphenyltin
       111, 106, 1056, 1140
CauHa 9NaOu
   Sodium deoxycholate
       III, 464
CauHuoNNaOsS
   Sodium 1-palmito-4-phenetidine-2 sulfonate
       III, 469
C_{24}H_{46}O_{4}Zn
   Zinc laurate
       III, 1043, 1049, 1145
C25H40NNaO5S
   Sodium I-oleo-4-anisidine-2 sulfonate
       III, 469
CasHuaNNaOsS
   Sodium 1-stearo-4-anisidine-2 sulfonate
      III, 469
Ca6CraHuaNuO11
   Novocaine bichromate
      111, 1023
C_{28}H_{54}O_{4}Zn
   Zinc myristate
      111, 1043, 1049, 1145, 1199, 1217
C3 6CaH6604
   Calcium oleate
      III, 1042
```

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C36CaH7004
    Calcium stearate
        III, 1034
C_{36}H_{66}MgO_{4}
    Magnesium oleate
        III, 1042
C36H66NiO4
    Nickel ricinoleate
        111, 1037
C_{36}H_{70}O_{4}Zn
    Zinc stearate
        III, 1043, 1049, 1145, 1217
Ca
    Calcium
        III, 1260
CaCl<sub>2</sub>
    Calcium chloride
        III, 20, 32, 33, 43, 44, 51, 58, 60, 63,
              65_67, 276_278, 748_769, 1086, 1142,
              1168, 1182-1184, 1193, 1196, 1198,
              1209, 1212, 1216, 1260
CaCl<sub>2</sub>O<sub>h</sub>
    Calcium chlorite
        III, 776
CaCl<sub>2</sub>0<sub>6</sub>
    Calcium chlorate
        III, 776
CaCl<sub>2</sub>O<sub>8</sub>
   Calcium perchlorate
        III, 784
CaCrO<sub>L</sub>
   Calcium chromate
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CaCr202
                                                             CaN206
   Calcium bichromate
                                                                Calcium nitrate
                                                                    III, 162, 166, 167, 170, 210, 777-784,
       III, 1027
                                                                          1086, 1143, 1158, 1169, 1184, 1185,
CaF2
                                                                          1213, 1260, 1283
   Calcium fluoride
       III, 3, 5, 11, 12, 213, 276, 277
                                                             Ca0
                                                                Calcium oxide
CaH<sub>2</sub>O<sub>2</sub>
                                                                    III, 114, 115, 118-121, 277, 278, 1070,
   Calcium hydroxide
                                                                          1071, 1293, 1294, 1298, 1312, 1313
       III, 774, 775
                                                             CaO<sub>3</sub>S<sub>2</sub>
CaH4N2O6S2
                                                                 Calcium thiosulfate
   Calcium sulfamate
                                                                    III, 785
      III, 785
                                                             CaO<sub>3</sub>Si
CaHhOgP2
                                                                 Calcium metasilicate
   Monocalcium phosphate
                                                                    III, 180, 182-184, 277-279
      III, 784
                                                             CaO<sub>3</sub>Ti
Calz
                                                                 Calcium metatitanate
   Calcium iodide
                                                                     III, 279
       III, 276, 277, 772-774, 1086, 1102, 1168,
            1304
                                                              CaO<sub>h</sub>S
                                                                 Calcium sulfate
CaI206
                                                                     III, 188, 193, 194, 197, 200, 278, 785,
   Calcium iodate
                                                                          1322
      III, 776
                                                              Ca06P2
CaMg06Si2
                                                                 Calcium metaphosphate
   Calcium magnesium metasilicate
                                                                     III, 175
      III, 279
                                                              Ca06S2
   Diopside
                                                                 Calcium dithionate
      III, 208, 1313
                                                                     111, 785
CaN2O4
   Calcium nitrite
      III, 775
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CaS
                                                                 CdC1aNH4
    Calcium sulfide
                                                                    Cadmium ammonium chloride
        III, 143, 278
                                                                        III, 882
Ca2Mg 2Fe204Si
                                                                 CdC13Rb
                                                                    Cadmium rubidium chloride
    Augi te
       III, 206
                                                                        III, 882
Ca<sub>2</sub>0<sub>n</sub>Si
                                                                 CdCluNa2
                                                                    Cadmium sodium chloride
    Calcium orthosilicate
       III, 206, 207, 279
                                                                        III, 882
Ca<sub>3</sub>O<sub>8</sub>P<sub>2</sub>
                                                                 CdF2
                                                                    Cadmium fluoride
    Calcium orthophosphate
       III, 277, 278, 279
                                                                        III, 5, 292
                                                                 CdFe204
Cd
                                                                    Cadmium ferrite
    Cadmium
                                                                        III, 151
        III, 1228
                                                                 CdH<sub>8</sub>N<sub>2</sub>O<sub>8</sub>S<sub>2</sub>
CdC1<sub>2</sub>
                                                                    Cadmium ammonium sulfate
    Cadmium chloride
                                                                        III, 893
       III, 21, 35, 36, 46, 47, 51, 53, 55, 60,
             63, 64, 67-70, 72, 73, 292, 293, 866-
                                                                 CdH<sub>12</sub>I<sub>2</sub>N<sub>4</sub>
             871, 1171, 1186, 1228, 1264, 1278
                                                                    Tetramminecadmium iodide
                                                                        III, 1236
CdC1206
   Cadmium chlorate
                                                                 CdIo
       III, 884, 1265
                                                                    Cadmium iodide
                                                                        III, 97-99, 101, 292, 293, 876-881, 1111,
CdC1208
                                                                              1118, 1124, 1125, 1130, 1132, 1137,
   Cadmium perchlorate
                                                                              1139, 1141, 1171-1173, 1187, 1188,
       III, 888
                                                                              1194, 1196, 1202, 1247, 1265
CdC1<sub>3</sub>K
                                                                 CdI206
   Cadmium potassium chloride
                                                                    Cadmium iodate
        III, 882
                                                                        III, 1265
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CdI4K2
                                                                   Ce
    Cadmium potassium iodide
                                                                       Cerium
        III, 883
                                                                           III, 1224
CdI<sub>u</sub>Sr
                                                                   CeC1<sub>3</sub>
    Cadmium strontium iodide
                                                                       Cerous chloride
        111, 883
                                                                           111, 988, 989, 1275
CdK_2O_8S_2
                                                                   CeF<sub>3</sub>
    Cadmium potassium sulfate
                                                                       Cerium fluoride
        III, 894
                                                                           III, 8
CdMoO4
                                                                    CeH<sub>8</sub>N<sub>2</sub>O<sub>15</sub>
    Cadmium molybdate
                                                                       Cerous ammonium nitrate
        III, 202, 293
                                                                           III, 990
CdN206
                                                                    CeH<sub>8</sub>N<sub>8</sub>O<sub>18</sub>
   Cadmium nitrate
                                                                       Ceric ammonium nitrate
        III, 154, 164, 168, 169, 172, 173, 210,
                                                                           111, 1002
             885-887, 1265, 1283
                                                                    CeN<sub>3</sub>O<sub>9</sub>
CdNa20aS2
                                                                        Cerous nitrate
   Cadmium sodium sulfate
                                                                           111, 989
       III, 894
                                                                    CeO2
CdO
                                                                        Cerium oxide
   Cadmium oxide
                                                                            III, 117, 130-132
       III, 124, 126, 1239, 1297
                                                                    Ce2MO3012
CdO<sub>3</sub>Si
                                                                        Cerium molybdate
   Cadmium metasilicate
                                                                            111, 203
       III, 184
                                                                    Ce<sub>2</sub>0<sub>3</sub>
CdO_{\mu}S
                                                                        Cerium sesquioxide
   Cadmium sulfate
                                                                            III, 132
       III, 190, 192, 195, 199, 201, 211, 292,
                                                                    Ce2012S3
             293, 888-893, 1265
                                                                        Cerous sulfate
Cd2C16Mg
                                                                            III, 989, 990
   Cadmium magnesium chloride
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С1НОц
Ce2012W3
                                                                Perchloric acid
   Cerium tungstate
                                                                   IV, 493-499, 810, 811
       III, 205
                                                            C1H<sub>h</sub>N
C1 ( see C1_2 )
                                                                Ammonium chloride
ClCs
                                                                   III, 1276-1278
   Cesium chloride
                                                                   IV, 582-593, 897, 898, 922, 923
       III, 18, 28, 29, 38, 49, 52-53, 265, 674-
                                                            C1H<sub>h</sub>NO
            678, 1227, 1233
                                                                Hydroxylamin hydrochloride
C1CsO<sub>3</sub>
                                                                   IV, 629
   Cesium chlorate
       III, 682
                                                            C1H<sub>h</sub>NO<sub>h</sub>
                                                                Ammonium perchlorate
C1CsOn
                                                                    IV, 614, 615, 905
   Cesium perchlorate
                                                            C1H<sub>5</sub>N<sub>2</sub>
       III, 683
                                                                Hydrazinium chloride
C1Cu
                                                                    IV, 628
   Cuprous chloride
                                                             C1H_5N_2O_{14}
       III, 19, 29, 39, 50, 52, 53, 57-59, 267,
                                                                Hydrazine perchlorate
            268, 1257, 1276
                                                                   IV, 629
ClH
                                                             ClHg
   Hydrochloric acid
                                                                Mercurous chloride
       IV, 441-459, 687-713, 880, 891, 892
                                                                    111, 58, 59, 1133, 1277
C1HO<sub>2</sub>Se
                                                             C1HgOu
   Selenium dioxide . hydrochloric acid
                                                                Mercurous perchlorate
       IV, 537
                                                                    III, 700
C1HO_3
                                                             ClI
   Chloric acid
                                                                Iodine monochloride
       IV, 491
                                                                    111, 1285
C1H0_3S
                                                                    IV, 745-747
   Chlorsulfonic acid
                                                             CIK
       IV, 918, 920, 921, 922
                                                                Potassium chloride
                                                                    III, 14-17, 23-28, 38-49, 244, 247-254,
                                                                         473_504, 1208, 1245, 1276, 1285
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ClNa0<sub>4</sub>
C1KO<sub>3</sub>
   Potassium chlorate
                                                               Sodium perchlorate
       111, 259, 550, 551
                                                                   III, 401-403
                                                            C102
C1KOu
                                                               Chlorine dioxide
   Potassium perchlorate
                                                                   IV, 491
       III, 259, 557
ClLi
                                                            C10aRb
                                                               Rubidium chlorate
   Lithium chloride
                                                                   III, 668
       III, 14-22, 215-218, 612-628, 1116, 1120,
            1130, 1162, 1163, 1176, 1177, 1207,
                                                            C10<sub>h</sub>Rb
            1248, 1276
                                                                Rubidium perchlorate
                                                                   111, 670
C1Li0<sub>3</sub>
   Lithium chlorate
                                                            C10 LT1
       III, 642, 643
                                                                Thallium perchlorate
                                                                   III, 688
ClLi0<sub>h</sub>
   Lithium perchlorate
                                                            ClRb
       III, 651
                                                                Rubidium chloride
CINO
                                                                   111, 17, 28, 38, 49-52, 264, 661-664, 1203,
                                                                         1232
   Nitrosyl chloride
       III, 1298
                                                            CITI
       IV, 804, 882, 916
                                                                Thallium chloride
C1Na
                                                                   III, 18, 29, 39, 49, 52-57, 266, 686
   Sodium chloride
                                                            CI_2
       III, 14, 23-38, 221, 224-228, 302-341,
                                                                Chlorine
             1208, 1227, 1245, 1246, 1251
                                                                   III, 1227-1232
C1Na0
                                                                   IV, 437, 438, 650, 651, 841, 854-859,
                                                                        881-883
    Sodium hypochlorite
       III, 379
                                                            ClaCo
C1NaO<sub>3</sub>
                                                                Cobalt chloride
    Sodium chlorate
                                                                   III, 22, 64, 66, 68, 71, 73, 75-77, 297,
                                                                         955-958, 1088, 1119, 1121, 1175,
       III, 151, 233, 380<sub>-</sub>383
                                                                         1191, 1195, 1269
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C1_2H_2O_2Se
ClaCoO6
                                                                 Selenium dioxide . di ( hydrochloric acid )
   Cobalt chlorate
                                                                    IV, 537
       III, 959
                                                             Cl<sub>2</sub>Hg
ClaCoOa
   Cobalt perchlorate
                                                                Mercuric chloride
                                                                    III, 36, 47, 55, 60, 74, 293, 294, 894,
       III, 961
                                                                         895, 1097, 1098, 1111, 1113, 1137,
C1<sub>2</sub>Cr
                                                                         1139, 1143, 1145, 1154, 1158, 1173,
   Chromous chloride
                                                                         1174, 1189-1191, 1194, 1197, 1198,
       111, 1268
                                                                         1200, 1204, 1214, 1242, 1277
Cl2CrO2
                                                             ClaHg0a
   Chromium oxychloride
                                                                Mercuric perchlorate
       III, 1231
                                                                    III, 896
Cl<sub>2</sub>Cu
                                                             Cl<sub>2</sub>Mg
   Cupric chloride
                                                                Magnesium chloride
       III, 47, 897-903, 1086, 1118, 1175, 1189,
                                                                    III, 19, 31, 42, 43, 50, 53, 54, 58, 60,
            1195, 1196, 1197, 1199, 1200, 1266
                                                                         63.65, 275, 703.714, 1087, 1093, 1167,
                                                                         1181, 1193, 1196, 1246, 1259
Cl<sub>2</sub>CuO<sub>6</sub>
   Cupric chlorate
                                                            C1_2Mg0_6
       111, 903, 904, 1267
                                                                Magnesium chlorate
ClaCuO8
                                                                   III, 718
    Cupric perchlorate
                                                            C1_2Mg0_8
       III, 908
                                                                Magnesium perchlorate
                                                                   III, 725
C1<sub>2</sub>Fe
    Ferrous chloride
                                                            Cl<sub>2</sub>Mn
       III, 64, 66, 68, 73, 75-77, 297, 932, 933,
                                                                Manganese chloride
             1119, 1268
                                                                   III, 22, 36, 48, 49, 52, 56, 57, 62, 64,
                                                                         66, 68, 70, 71, 73, 75-77, 919-923,
Cl2Fe08
                                                                         1118, 1121, 1175, 1191, 1268
    Ferrous perchlorate
       III, 938
                                                            Cl<sub>2</sub>Ni
                                                                Nickel chloride
 C1_2H_2Mo0_3
    Molybdenum oxydichloride
                                                                   111, 943-945, 1120, 1122, 1175, 1270
       III, 1176
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ClaNiO6
                                                          Cl_2O_6Zn
   Nickel chlorate
                                                              Zinc chlorate
      111, 946, 1272
                                                                 III, 846, 1263
Cl2NiO8
                                                          C1207
   Nickel perchlorate
                                                              Chlorine heptoxide
      III, 949
                                                                 IV, 803
C120
                                                          ClaOaPb
   Chlorine monoxide
                                                              Lead perchlorate
       IV, 490
                                                                 III, 745
C120S
                                                          Cla0gSr
   Thionyl chloride
                                                              Strontium perchlorate
       IV, 805, 806
                                                                 III, 807
C120Se
                                                          C1_20_8Zn
    Selenium oxychloride
                                                              Zinc perchlorate
       IV, 537
                                                                 III, 851, 852
C1_20_2S
                                                          C12010U
    Sulfuryl chloride, Sulfuric oxychloride
                                                              Uranyl perchlorate
       111, 1308
                                                                 111, 1011
       IV, 806, 807, 918
                                                          Cl<sub>2</sub>Pb
C1_{2}0_{2}U
                                                              Lead chloride
    Uranyl chloride
                                                                 III, 21, 22, 34, 35, 47, 48, 51, 53, 56,
       111, 1008
                                                                      59-64, 67-77, 283-288, 740, 1228, 1262
 Cl20uSr
                                                          Cl<sub>2</sub>Pt
    Strontium chlorite
                                                              Platinum dichloride
       III, 801
                                                                 111, 1273
 C1205S2
                                                          CloS
    Pyrosulfuryl chloride
                                                              Sulfur dichloride
       IV, 921
                                                                 IV, 858
 C1206Sr
                                                          Cl_2S_2
    Strontium chlorate
                                                              Sulfur monochloride
       111, 802
                                                                 IV, 759, 857, 858, 892
```

```
Cl<sub>2</sub>Sn
                                                                Cl3GaO12
    Stannous chloride
                                                                    Gallium perchlorate
        III, 21, 34, 47, 56, 58, 64, 67, 69, 70,
                                                                       111, 981
              72, 74-76, 740, 1192
                                                                Cl<sub>3</sub>HSi
 Cl<sub>2</sub>Sr
                                                                    Trichlorsilane
    Strontium chloride
                                                                       IV, 761, 911
        III, 20, 33, 44, 51, 54, 63, 65, 68, 279,
                                                                C1_3I
              280, 790-797, 1213, 1247
                                                                    Iodine trichloride
 Cl<sub>2</sub>Zn
                                                                       IV, 747, 883
    Zinc chloride
                                                                Cl<sub>3</sub>In
        III, 21, 35, 45, 55, 58, 60, 64, 67-72,
                                                                    Indium chloride
             291, 838-843, 1117, 1129, 1132, 1170,
                                                                       111, 37, 62, 72, 73, 76, 982
             1186, 1213, 1263, 1277
                                                                Cl<sub>3</sub>La
C1_3CoH_{15}N_5
                                                                   Lanthanum chloride
    Cobalt chloride pentammine
                                                                       III, 986, 987
       111, 964, 1002
                                                               C13Nd
Cl<sub>3</sub>Cr
                                                                   Neodymium chloride
    Chromic chloride
                                                                       III, 984
       III, 996-998
                                                               C130P
C1<sub>3</sub>Eu
                                                                   Phosphorus oxychloride
    Europium chloride
                                                                       III, 1299
       III, 984
                                                                       IV, 804, 882, 909, 918
Cl<sub>3</sub>Fe
                                                               C130V
   Ferric chloride
                                                                   Vanadium oxytrichloride
       III, 57, 59, 72, 77-80, 990-993, 1098,
                                                                      IV, 888
             1150, 1176, 1191, 1192, 1199, 1200,
             1215, 1275, 1278, 1290
                                                               Cl<sub>3</sub>P
                                                                  Phosphorus trichloride
Cl_3FeO_{12}
                                                                      111, 1287
   Ferric perchlorate
                                                                      IV, 751, 752, 884, 886, 909
       111, 995
                                                               C<sub>13</sub>Pr
Cl<sub>3</sub>Ga
                                                                  Praseodymium chloride
   Gallium trichloride
       III, 1091, 1092
                                                                      III, 985
```

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C1<sub>3</sub>Sb
                                                              Cl<sub>4</sub>Ge
   Antimony trichloride
                                                                 Germanium tetrachloride
       111, 49, 74, 75, 78, 79, 299, 1035, 1036,
                                                                     111, 1078-1079, 1080, 1081, 1082, 1287,
            1039, 1043, 1045-1048, 1050-1055,
                                                                           1306
            1063-1068, 1077, 1079, 1081, 1083,
                                                                     IV, 910, 911
            1088-1092, 1113, 1115, 1127, 1128,
                                                              C1<sub>h</sub>Pb
            1144, 1146, 1151-1153, 1155-1157,
                                                                  Lead tetrachloride
            1205, 1214, 1215, 1219-1221, 1223,
                                                                     111, 1057
            1278
       IV, 490, 759, 885
                                                              C1_{\mu}Pt
                                                                  Platinum tetrachloride
C1<sub>x</sub>Sc
                                                                     III, 1003
   Scandium chloride
       111, 984
                                                              C1<sub>4</sub>Se
                                                                  Selenium tetrachloride
C13Sm
                                                                     III, 1290
   Samarium chloride
       III, 981
                                                              Cl<sub>h</sub>Si
                                                                  Silicium tetrachloride
Cl<sub>3</sub>Ti
                                                                     III, 1290
   Titanium trichloride
                                                                     IV, 761-765, 910, 911
       III, 988
                                                              C1<sub>h</sub>Sn
C13T1
                                                                  Stannic tetrachloride, Tin tetrachloride
   Thallic chloride
                                                                     III, 78-80, 300, 301, 1004, 1005, 1033,
       III, 1275
                                                                           1034, 1036, 1040, 1041, 1044, 1048,
C1_3Y
                                                                           1051, 1057, 1061, 1062, 1064, 1075,
   Yttrium chloride
                                                                           1080, 1081, 1082, 1088, 1089, 1093,
       III, 980
                                                                           1094, 1095, 1099, 1103-1108, 1112,
                                                                           1114, 1115, 1150, 1152, 1156, 1157,
CluCuHaNa
                                                                           1176, 1192, 1200, 1205, 1206, 1207,
   Cupric diammonium chloride
                                                                           1215, 1216, 1219, 1231, 1287, 1307,
       III, 918
                                                                           1308
Cl<sub>h</sub>CuK<sub>2</sub>
                                                               Cl<sub>h</sub>Te
   Potassium copper chloride
                                                                  Tellurium tetrachloride
       111, 903
                                                                      III, 1290
```

C15 Ta CluTh Tantalum pentachloride Thorium tetrachloride 111, 38, 78, 79, 80, 1061 111, 1006, 1141 Cl6H8N2Pb Cl₄Ti Ammonium chloroplumbate Titanium tetrachloride 111, 105 111, 80, 1032, 1055, 1057, 1061, 1062, 1067, 1074, 1088, 1089, 1095, 1096, Cl₆H₈N₂Pt 1098, 1101, 1102, 1103, 1108, 1109, Ammonium chloroplatinate 1112, 1114, 1115, 1150, 1152, 1153, 111, 106 1154, 1155, 1156, 1157, 1159, 1160, 1161, 1176, 1200, 1231, 1290, 1306 Cl₆H₈N₂Sn Ammonium chlorostannate C1_uV 111, 105, 106 Vanadium tetrachloride 111, 1058 Cl₆Na₂Pt Sodium chloroplatinate CluZr 111, 1004 Zirconium tetrachloride Cl₇Hf0P 111, 37, 81, 1299, 1307 Hafnium tetrachloride . Phosphorus oxychloride Cl₅FeK₂ III, 1151 Potassium ferric chloride Cl₇OPZr 111, 1275 Zirconium tetrachloride . Phosphorus oxychlo-C15Nb ride Niobium pentachloride III, 1151 III, 38, 78, 79-81 Cl₈FeP C1₅P Ferric phosphorus chloride Phosphorus pentachloride III, 1150 III, 1290 $C1_{10}Hf0_2P_2$ IV, 884, 886 Hafnium tetrachloride . Diphosphorus oxychloride C15Sb 111, 1151 Antimony pentachloride III, 79, 80 CI₁₀0P₂Zr IV, 911 Zirconium tetrachloride . Diphosphorus oxychloride

```
Co
                                                              Cr
    Cobalt
                                                                  Chromium
        III, 214
                                                                     III, 1239
 CoFe<sub>2</sub>0<sub>h</sub>
                                                              CrCs201
    Cobalt ferrite
                                                                  Cesium chromate
       111, 151
                                                                     111, 265
 CoH<sub>8</sub>N<sub>2</sub>O<sub>8</sub>S<sub>2</sub>
                                                              CrH204
    Cobalt ammonium sulfate
                                                                  Chromic acid
       III, 297, 964
                                                                     111, 1015
CoI2
                                                              CrH4NO8S2
    Cobalt iodide
                                                                  Chromic ammonium sulfate
       III, 958, 1120, 1122, 1270
                                                                     111, 1000
CoK208S2
                                                              CrH5NO4
    Cobalt potassium sulfate
                                                                  Acid ammonium chromate
       III, 297, 964
                                                                     111, 1016
CoN206
                                                              CrHgN204
   Cobalt nitrate
                                                                  Ammonium chromate
       111, 959-961, 1111, 1136
                                                                     111, 1016
CoNa208S2
                                                              CrK08S2
   Cobalt sodium sulfate
                                                                  Potassium chromium sulfate
       III, 964
                                                                     III, 212, 1000, 1001
CoO
                                                              CrK204
   Cobalt oxide
                                                                  Potassium chromate
       111, 116, 125, 127, 128, 1317
                                                                     III, 201, 246, 253, 255, 256, 260-262,
                                                                           1018-1022
Co_3 O_{i_k}
   Cobaltic oxide
                                                              CrLi204
       III, 139
                                                                  Lithium chromate
                                                                     III 220, 1016
CoO<sub>14</sub>S
   Cobalt sulfate
                                                              CrMgOu
       III, 190, 196, 200, 297, 961-964, 1270
                                                                 Magnesium chromate
                                                                     III, 275, 1022
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Cr2Mg08Rb2
CrN<sub>3</sub>0<sub>9</sub>
                                                              Rubidium magnesium chromate
   Chromic nitrate
                                                                 III, 276
      111, 998, 999
                                                           CraNa207
CrNa204
                                                              Sodium bichromate
   Sodium chromate
                                                                 111, 205, 1024
      III, 201, 223, 227, 233, 236-238, 1017,
            1018
                                                           Cr_{g}O_{3}
                                                              Chromic oxide
Cr03
                                                                  III, 117, 118, 121, 130, 135, 136, 138,
   Chromic anhydride
                                                                        1239
      111, 1014, 1015
                                                           Cr207Rb2
Cr0<sub>u</sub>Pb
                                                               Rubidium bichromate
   Lead chromate
                                                                  III, 1026
      III, 290, 291
                                                           Cr2012S3
CrO4Rb2
                                                               Chromic sulfate
   Rubidium chromate
                                                                  III, 999, 1274
      III, 264, 1023
                                                           Cr_{14}H_{16}MgN_{14}O_{16}
Cr2H2O2
                                                               Ammonium magnesium chromate
   Bichromic acid
                                                                  111, 276
      III, 1023
                                                            Cs
Cr2H8MgN208
                                                               Cesium
   Magnesium ammonium chromate
                                                                  III, 1227, 1235, 1257
      III, 275
                                                            CsF
Cr_2H_8N_2O_7
                                                               Cesium fluoride
   Ammonium bichromate
                                                                   III, 10, 213, 264, 265, 674, 1227, 1243
      III, 1023
                                                            CsH0
Cr2N207
                                                               Cesium hydroxide
   Potassium bichromate
                                                                   III, 682
      111, 205, 254, 262, 263, 1025, 1026
                                                            CsI
Cr2Li207
                                                                Cesium iodide
   Lithium bichromate
                                                                   111, 680, 681, 1228, 1233, 1235, 1257,
      111, 1023
                                                                         1304
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CsNO<sub>3</sub>
                                                                 CuH aN2 OaS2
    Cesium nitrate
                                                                    Cupric diammonium sulfate
        III, 153, 169-172, 682, 683, 1282
                                                                        111, 918
\text{Cs}_{\text{2}}\text{Mg}0_{\text{8}}\text{S}_{\text{2}} . 6\text{H}_{\text{2}}0
                                                                 CuI
    Magnesium cesium sulfate
                                                                    Cuprous iodide
       III, 276
                                                                        111, 99, 100, 267, 268, 1118, 1123, 1124,
                                                                              1130, 1131, 1136, 1138, 1258
Cs2MoO4
    Cesium molybdate
                                                                 CuI2
       III, 265
                                                                    Cupric iodide
                                                                        111, 1267
Cs<sub>2</sub>0
    Cesium oxide
                                                                 CuI206
       III, 113, 1070
                                                                    Cupric iodate
                                                                        III, 1267
Cs_20_{\mu}S
   Cesium sulfate
                                                                 CuN206
       III, 188, 200, 265, 683, 684
                                                                    Cupric nitrate
                                                                        III, 904-908, 1267
Cs20uSe
   Cesium selenate
                                                                 Cu0
       III, 684
                                                                    Cupric oxide
                                                                        III, 113-115, 122, 125, 126
Cs20uW
   Cesium tungstate
                                                                 CuO<sub>2</sub>S
       III, 265
                                                                    Cupric sulfate
                                                                        III, 909-918, 1136, 1247, 1267
CsO6Ti2
   Cesium bititanate
                                                                 Cu06S2
       III, 265
                                                                    Cupric dithionate
                                                                        III, 918
CuFe_20_{\mu}
   Cupric ferrite
                                                                 CuOaNaaSa
       III, 151
                                                                    Cupric sodium sulfate
                                                                        111, 918
CuH_{14}N_{2}O_{6}S_{2}
   Cupric sulfamate
                                                                 CuS
       III, 919
                                                                    Cupric sulfide
                                                                        III, 140
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Cu2HgI4
                                                               Di2MO3012
    Cuprous mercuriiodide
                                                                  Didymium molybdate
       III, 103
                                                                      III, 203, 211
Cu<sub>2</sub>0
                                                               ErF<sub>3</sub>
    Cuprous oxide
                                                                  Erbium fluoride
       III, 113, 114, 268, 1311
                                                                      111, 9, 10
Cu<sub>2</sub>S
                                                               Er203
    Cuprous sulfide
                                                                  Erbium oxide
       III, 139-142, 268
                                                                      III, 138
D ( see D<sub>2</sub> )
                                                               Era012S2
                                                                  Erbium sulfate
DH
                                                                      III, 986
   Deuterohydrogen
       IV, 830
                                                               FH
                                                                  Hydrofluoric acid
DΙ
                                                                      III, 1243, 1244
   Deuteroiodic acid
                                                                      IV, 438-441, 687, 889, 890
       IV, 894
                                                               FH<sub>1</sub>N
D_{2}
                                                                  Ammonium fluoride
   Deuterium
                                                                      IV, 581
       III, 1225
       IV, 437, 830, 842
                                                               FK
   o and p-Deuterium
                                                                  Potassium fluoride
       IV, 842
                                                                      III, 1, 3, 6-9, 212, 244-247, 470-473,
                                                                            1227, 1243, 1297
D_20
   Heavy water
                                                               FLi
       III, 1246, 1247
                                                                  Lithium fluoride
       IV, 471-473, 718, 719
                                                                          , 1-3, 215, 216
D<sub>2</sub>Se
                                                               FNa
   Deuterium selenide
                                                                  Sodium fluoride
       IV, 895
                                                                      III, 1, 3-6, 212, 221-223, 302, 1226, 1243,
                                                                            1245, 1297
DiN<sub>3</sub>0<sub>9</sub>
   Didymium nitrate
      III, 174
```

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```
F<sub>2</sub>Zn
 FRb
                                                                  Zinc fluoride
    Rubidium fluoride
                                                                     111, 5, 10
        III, 6, 9, 10, 213, 263, 264, 660
                                                              F<sub>3</sub>Fe
 FT1
                                                                  Ferric fluoride
    Thallium fluoride
                                                                      III, 6
        III, 685, 686, 1244
                                                              F<sub>3</sub>La
 F<sub>2</sub>HK
                                                                  Lanthanum fluoride
    Potassium acid fluoride
                                                                     III, 12
        III, 473
                                                              F<sub>3</sub>0P
F_2H_5N
                                                                  Phosphoryl fluoride
    Ammonium acid fluoride
                                                                      IV, 907
       IV, 581
                                                              F_3P
F_{2}Mg
                                                                  Phosphorus trifluoride
    Magnesium fluoride
                                                                      IV, 907
       III, 1, 4, 6, 7, 9, 11, 12, 275
                                                               F<sub>3</sub>PS
FaNi
                                                                  Thiophosphoryl fluoride
   Nickel fluoride
                                                                      IV, 907
       III, 8
                                                               F_3Pr
F20S
                                                                  Praseodymium fluoride
   Thionyl fluoride
                                                                      111, 6, 9, 10
       IV, 907
                                                               F<sub>3</sub>Sb
F_2O_2U
                                                                  Antimony trifluoride
   Uranyl fluoride
                                                                      III, 299
       III, 1008
                                                                      IV, 490
FaPb
                                                               F<sub>3</sub>Sm
   Lead fluoride
                                                                  Samarium fluoride
       III, 5, 8, 283, 284
                                                                      III, 8, 10
F2Sr
                                                               F<sub>3</sub>Y
   Strontium fluoride
                                                                  Yttrium fluoride
       III, 12, 279
                                                                      III, 12
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```
F<sub>6</sub>H<sub>8</sub>N<sub>2</sub>Si
 F<sub>h</sub>Pu
                                                                      Ammonium fluosilicate
    Plutonium fluoride
                                                                          IV, 627, 628
        III, 13
                                                                   F_6H_8N_2Zr
F_{u}Si
    Silicium tetrafluoride
                                                                      Diammonium fluozirconate
                                                                          111, 1006
        IV, 761, 903
F_{t_{\mu}}Th
                                                                   F<sub>6</sub>KP
                                                                      Potassium hexafluorophosphate
    Thorium fluoride
                                                                          111, 536
        III, 13
F_{\mathbf{k}}U
                                                                   F<sub>6</sub>MgSi
    Uranium fluoride
                                                                       Magnesium fluosilicate
                                                                          III, 718
       III, 13
                                                                   F<sub>6</sub>PbSi
F_5I
                                                                       Lead fluosilicate
    Iodine pentafluoride
       IV, 890
                                                                           III, 747
                                                                   F_6S
F<sub>5</sub>Sb
                                                                       Sulfur hexafluoride
    Antimony pentafluoride
                                                                           IV, 760, 761
       III, 299
       IV, 889, 906, 911
                                                                   F<sub>6</sub>SiZn
                                                                       Zinc fluosilicate
F&GeLi2
                                                                           III, 865
    Lithium fluogermanate
       111, 1003
                                                                   F_6U
                                                                       Uranium hexafluoride
F6GeT12
                                                                           111, 1235, 1244, 1286, 1290
   Thallium fluogermanate
       III, 1003
                                                                   F<sub>6</sub>W
                                                                       Tungsten hexafluoride
F6H2Si
                                                                           III, 1062, 1063
   Fluosilicic acid
       IV, 490
                                                                   F7H12HfN3
                                                                       Triammonium fluohafniate
F6H8HfN2
                                                                           III, 1006
   Diammonium fluohafniate
       III, 1006
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F7H12N3Zr
                                                             FeNa208S2
   Triammonium fluozirconate
                                                                Sodium ferrous sulfate
       III, 1006
                                                                    III, 942
Fe
                                                             FeNiS
   Iron
                                                                Pentlandi te
       III, 214, 1239
                                                                    III, 146
FeH_{14}NO_{14}S_{2}
                                                             Fe0
   Ferric ammonium sulfate
                                                                Ferrous oxide
      III, 996
                                                                    III, 115, 116, 126, 127, 1316
FeHgN20gS2
                                                             FeO<sub>3</sub>Si
   Ammonium ferrous sulfate
                                                                Ferrous metasilicate
      III, 211, 942
                                                                    111, 183, 184
FeI2
                                                             Fe0uS
   Ferrous iodide
                                                                Ferrous sulfate
      111, 937, 1119, 1269
                                                                    111, 211, 938-941, 1269
FeKO<sub>8</sub>S<sub>2</sub>
                                                             FeS
   Potassium ferric amum
                                                                Ferrous sulfide
      III, 977
                                                                    III, 139, 141, 143-146, 297
FeK208S2
                                                             FeSx
   Potassium ferrous sulfate
                                                                Pyrrhotite
      III, 942
                                                                    III, 146
FeN<sub>2</sub>0<sub>6</sub>
                                                             Fe2MgO4
   Ferrous nitrate
                                                                 Magnesium ferrite
      III, 937
                                                                    III, 151
FeN_3O_9
                                                             Fe2Na2012Si4
   Ferric nitrate
                                                                 Acmite
       111, 994
                                                                    III, 208
FeNa0o
                                                             Fe2NiOu
   Sodium ferrite
                                                                 Nickel ferrite
      III, 233
                                                                    III, 151
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GeNa203
Fe_20_3
                                                                 Sodium metagermanate
   Ferric oxide
                                                                     III, 237, 1003
      III, 120, 123, 126-128, 130, 136, 138, 139,
            1299
                                                              H ( see H<sub>2</sub> )
Fe204Si
                                                              HI
   Ferrous orthosilicate
                                                                 Hydroiodic acid
      III, 207, 297
                                                                     IV, 465-467, 718, 894
Fe<sub>2</sub>0<sub>h</sub>Zn
                                                              HIO3
   Zinc ferrite
                                                                 Iodic acid
       III, 151
                                                                     IV, 491-493
Fe2012S3
                                                              HIO_{14}
   Ferric sulfate
                                                                 Periodic acid
      III, 995, 996, 1275
                                                                     IV, 499
Fe<sub>3</sub>0<sub>4</sub>
                                                              HK0
   Ferrosoferric oxide
                                                                 Potassium hydroxide
       111, 118, 130, 137, 139
                                                                     III, 149, 245, 251, 255-257, 540-548, 1180,
Ga
                                                                          1203
   Gallium
                                                              HKO<sub>3</sub> S
       III, 1238
                                                                 Potassium acid sulfate
Gd
                                                                     III, 580
   Gadolinium
                                                              HKO<sub>14</sub>S
      III, 1226
                                                                 Potassium acid sulfate, Potassium hydrogen
                                                                 sulfate
Gd_2O_3
                                                                     III, 191, 262, 586, 587, 1284, 1321
   Gadolinium oxide
       III, 132, 137
                                                              HK_2O_\mu P
                                                                 di-Potassium orthophosphate
Ge
                                                                     III, 569
   Germanium
       III, 1240
                                                              HLi0
                                                                 Lithium hydroxide
GeO2
   Germanium oxide
                                                                     III, 149, 215, 216, 218
       111, 107, 108, 112
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HLiO4S
                                                           HO4RbS
    Lithium acid sulfate, Lithium hydrogen sulfa-
                                                              Rubidium acid sulfate
                                                                 III, 672
       III, 656, 1320
                                                           HO<sub>h</sub>Re
HNO<sub>3</sub>
                                                              Rhenic acid
    Nitric acid
                                                                 III, 1030
       III, 1319
                                                           Ηa
       IV, 501-517, 807-809, 892, 903, 914-920
                                                              Hydrogen
HN09S2
                                                                 III, 1223-1226
   Nitratopyrosulfonic acid
                                                                 IV, 630-647, 830-841, 877, 878
       IV, 920
                                                              p-Hydrogen
                                                                 IV, 830
HNa0
   Sodium hydroxide
                                                           Hakn
       III, 149, 213, 222, 225, 228, 229, 231,
                                                              Potassamide
            364-378, 1202
                                                                 111, 103
HNa0<sub>4</sub>S
                                                           H2KOhP
   Sodium acid sulfate, Sodium hydrogen sulfate
                                                              Mono-potassium orthophosphate
       III, 191, 239, 438, 1320
                                                                 III, 570, 571, 1322
HNa203P
                                                           H_2NO_4P
   Disodium orthophosphite
                                                              Mono-ammonium phosphate
      111, 401
                                                                  III, 1283
                                                                  IV, 615, 616, 922
HNa20hP
                                                          HaLinos S
   Disodium phosphate
                                                             Lithium aminosulfate
      III, 404, 405
                                                                 III, 651
HNa307P2
                                                          H_2Mg0_8S_2
   Trisodium pyrophosphate
                                                             Magnesium acid sulfate
      III, 408
                                                                III, 737
HORb
                                                          HaNNa
   Rubidium hydroxide
                                                             Sodamide
      111, 149
                                                                111, 103
HOT1
                                                          HaNNa03S
   Thallium hydroxide
                                                             Sodium sulfamate
      III, 686
                                                                III, 233, 1284
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H_2Na0_4P
                                                                    H_{2}O_{1}O_{2}U
                                                                        Uranyl acid sulfate
     Monosodium phosphate
                                                                            III, 1013
         III, 406, 407, 1322
 H_20
                                                                    H2013WW4
                                                                        Metatungstic acid
     Water
                                                                            III, 1030
        III, 302-1030
        IV, 1-629
                                                                    H<sub>2</sub>S
 H_2O_2
                                                                        Hydrogen sulfide
    Hydrogen peroxide
                                                                            IV, 473, 721-730, 887, 891, 893, 894, 895
        III, 1245
                                                                    H<sub>2</sub>Se
        IV, 468-471, 719, 720, 894
                                                                        Hydrogen selenide
                                                                            IV, 895
H<sub>2</sub>O<sub>2</sub>Sr
    Strontium hydroxide
                                                                    H3KO6Se2
        III, 280
                                                                        Potassium acid selenite
                                                                            III, 582
H<sub>2</sub>O<sub>3</sub>Se
    Selenious acid
                                                                    H_3N
        IV, 533
                                                                        Ammonia
H<sub>2</sub>O<sub>h</sub>S
                                                                           III, 1247, 1275
    Sulfuric acid
                                                                            IV, 474-487, 731-742, 877, 879, 887-889,
                                                                                894-905
        III, 1319-1322
        IV, 543-580, 815-824, 918-921
                                                                    H<sub>3</sub>O<sub>3</sub>NS
H₂0<sub>4</sub>Se
                                                                       Sulfamic acid
                                                                           IV, 580
    Selenic acid
       IV, 534-536, 920
                                                                   H_3 O_3 P
H_{2}O_{7}S_{2}
                                                                       Phosphorus acid
   Pyrosulfuric acid
                                                                           IV, 518, 812, 922
       IV, 546, 825, 922
                                                                   H_3O_4P
H<sub>2</sub>O<sub>8</sub>S<sub>2</sub>Sr
                                                                       Phosphoric acid
   Strontium acid sulfate
                                                                           III, 1322
       III, 807
                                                                           IV, 521-528, 812-815, 920, 922
                                                                   H_3O_{40}W_{12}
                                                                       Phosphotungstic acid
                                                                           111, 1030
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H_{4}N_{4}
H_3P
                                                                     Ammonium trinitride
   Hydrogen phosphide
                                                                         IV, 901, 902
       IV, 487
H_{4}Al_{3}Br_{10}N
                                                                 H4NiO4P2
    Ammonium aluminum bromide
                                                                     Nickel hypophosphite
       III, 1148
                                                                         III, 1273
H<sub>L</sub> IN
                                                                 H<sub>5</sub>KO<sub>8</sub>P<sub>2</sub>
    Ammonium iodide
                                                                     Mono-potassium orthophosphate . phosphoric
       III, 1280
                                                                     acid
       IV, 597-599, 825, 826, 885, 900, 901, 918
                                                                         111, 572
                                                                 H_5NO_3S
H_{4}MgN_{2}O_{6}S_{2}
    Magnesium sulfamate
                                                                     Ammonium hydrogen sulfite
                                                                        IV, 617
       III, 738
                                                                 H5NO4S
HuNNa0uS
                                                                     Ammonium acid sulfate
    Sodium ammonium sulfate
       111, 438
                                                                        III, 1284
                                                                        IV, 626, 921
HuNO2S
                                                                 H_5N_3O_3
    Sulfamide
        IV, 903
                                                                    Hydrazine nitrate
                                                                        IV, 628
H_h N_2
                                                                 H_5N_5
    Hydrazine
        IV, 488-490, 742-745, 896, 905
                                                                    Hydrazine trinitride
                                                                        IV, 903, 905
H_h N_2 O_2
    Ammonium nitrite
                                                                H<sub>5</sub>NaO<sub>8</sub>P<sub>8</sub>
        IV, 599
                                                                    Halfsodium phosphate
                                                                        III, 407
 H_{14}N_{2}O_{3}
                                                                H6KOhP
    Ammonium nitrate
                                                                    Potassium orthophosphate
        III, 1280-1283
        IV, 599-614, 826-829, 904, 905, 923
                                                                        III, 1283
```

H6N203S Ammonium sulfamate III, 1284 IV, 627 H₆N₂O_hS Hydrazine sulfate IV, 629 H6N409 Ammonium trinitrate IV, 615 H₇NO₆Se₂ Ammonium tetraselenite IV, 618 $H_8MgN_2O_8S_2$ Magnesium ammonium sulfate III, 211, 275, 738 HaMnNaOaSa Manganese ammonium sulfate III, 932 HgMoOuNg Ammonium molybdate III, 1027 HaNaNiOaSa Nickel ammonium sulfate III, 297, 954 HaNaOaS Ammonium sulfite IV. 617 HgN2O3Se Ammonium selenite

IV. 618

 $H_8N_2O_4S$ Ammonium sulfate III, 1284 IV, 618-625, 921, 923 $H_8N_80_4S$. $Mg0_4S$. $6~H_80$ Ammonium magnesium sulfate 111, 275 $H_8N_2O_4Se$ Ammonium selenate IV, 627 $H_8N_2O_5Se_2$ Ammonium pyroselenite IV, 618 HaNaO6Sa Ammonium dithionate IV, 626 H8N206S3 Ammonium trithionate IV, 626 $H_8N_2O_6S_{11}$ Ammonium tetrathionate IV, 626 $H_8N_2O_8S_2Zn$ Zinc ammonium sulfate III, 291, 864 $H_8N_70_{15}Pr$ Praseodymium ammonium nitrate III, 986 H9N08P2 Halfammonium phosphate IV, 615

```
Hg I<sub>3</sub>K
                                                            H_9N_2O_hP
   Mono-potassium mercuric iodide
                                                               Diammonium phosphate
      III, 1135
                                                                   IV, 616
Hg I 4 K 2
                                                            H_{12}I_2N_4Zn
   Dipotassium mercuric iodide
                                                               Tetramminezinc iodide
      III, 1266
                                                                   111, 1235, 1236
Hg0<sub>4</sub>S
                                                            H_{1} \approx N_3 S_4 Sb
   Mercuric sulfate
                                                               Ammonium thioantimonate
      III, 294-296
                                                                   IV, 627
HgSe
                                                            H_{16}MgN_{4}O_{8}S_{2} . 6 H_{2}O
   Mercuric selenide
                                                               Magnesium ammonium sulfate
      111, 1319
                                                                  III, 276
I ( see I2 )
                                                            H18I2N6Ni
                                                               Tetramminenickel indide
ΙK
                                                                  III, 1236, 1237
   Potassium iodide
      III, 96, 98, 245, 249, 250, 254-256, 520-
                                                           H24Mo, 8N6O62P2
            536, 1085, 1116, 1140, 1165, 1166,
                                                               Ammonium luteophosphomolybdate
            1201, 1203, 1209, 1227, 1232, 1246,
                                                                  III, 1028
            1256, 1301, 1302, 1303
                                                           He
IKO<sub>3</sub>
                                                              Helium
   Potassium iodate
                                                                  IV, 647, 648, 830, 831, 843-847
      111, 552
                                                            He3 and He4
ILi
                                                                   IV, 842, 843
   Lithium iodide
                                                            Hg I2
      III, 96, 218, 635-640, 1131, 1163, 1177,
                                                               Mercuric iodide
            1207, 1300
                                                                   III, 98, 100-102, 294, 295, 296, 896, 1056,
ILi03
                                                                        1118, 1124, 1126, 1134, 1135, 1137,
   Lithium iodate
                                                                        1138, 1145, 1152, 1154, 1155, 1157,
      III, 644, 645
                                                                        1266, 1280
```

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INa
                                                          I_{2}Mg0_{6}
   Sodium iodide
                                                             Magnesium iodate
      III, 96-98, 221, 224, 225, 228, 229, 352-
                                                                III, 719, 1076
            361, 1075, 1082, 1084, 1085, 1088,
                                                          I_{2}Mn
            1110, 1123, 1131, 1138, 1140, 1141,
                                                             Manganese iodide
            1164, 1178, 1179, 1193, 1198, 1201,
                                                                III, 924, 1119, 1121, 1141, 1268
            1208, 1235, 1246, 1252, 1300
                                                          I<sub>2</sub>Ni
INa03
                                                            Nickel iodide
   Sodium iodate
                                                                III, 946, 1120, 1122, 1123, 1271
      111, 384
                                                         IaNiO6
IRb
                                                            Nickel iodate
   Rubidium iodide
                                                                III, 1272
       III, 666-668, 1204, 1227, 1232, 1256, 1304
                                                         I_2O_6Zn
IT1
                                                            Zinc iodate
   Thallium iodide
                                                               III, 1263
       111, 266, 267
                                                         I_2Pb
I_2
                                                            Lead iodide
    Iodine
                                                               III, 98-101, 286-289, 740, 1262
       III, 1235-1238
       IV, 658-661, 854, 855, 859, 869, 862-864,
                                                         I2Pt
           886
                                                            Platinum iodide
                                                               III, 1273
I2HKO6
    Potassium acid iodate
                                                         I_2Sr
       III, 572
                                                            Strontium iodide
                                                               III, 800, 1305
I_2Mg
    Magnesium iodide
                                                         I_aZn
       III, 97, 98, 717, 718, 1078, 1083, 1086,
                                                            Zinc iodide
             1093, 1101, 1102, 1111, 1125, 1142,
                                                               III, 845, 1102, 1111, 1117, 1125, 1132,
            1143, 1167, 1196, 1212, 1259
                                                                    1137, 1139, 1170, 1171, 1186, 1194,
I_2Mg . C_{1\,2}H_{3\,6}O_6
                                                                    1263
   Magnesium iodide . Etherate
                                                         I_3 In
      111, 1182
                                                            Indium iodide
                                                               III, 983
```

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In<sub>2</sub>S<sub>3</sub>
I_3P
                                                                  Indium sulfide
   Phosphorus triiodide
                                                                     III, 1242
       IV, 863, 909
I_3Sb
                                                              In2S3012
                                                                  Indium sulfate
   Antimony triiodide
       III, 102, 299, 300, 1052, 1053, 1055, 1113,
                                                                     III, 983
            1146, 1153
                                                              K
       IV, 909, 910
                                                                 Potassium
I_{\mu}K_{2}Pb
                                                                     III, 1227, 1254, 1255
   Lead potassium iodide
                                                              KMn0<sub>h</sub>
       III, 740
                                                                 Potassium permanganate
                                                                     III, 259, 568
I_{\mu}P_{2}
   Phosphorus diiodide
                                                              KNO<sub>2</sub>
       IV, 863
                                                                 Potassium nitrite
                                                                     111, 149, 150, 256, 257, 549
I_{\mu}Sn
   Stannic iodide, Tin tetraiodide
                                                              KN0_3
       III, 103, 301, 1031-1033, 1035, 1036, 1041,
                                                                 Potassium nitrate
             1044, 1048, 1056, 1061, 1074, 1078,
                                                                     III, 153, 155-160, 164-169, 251, 255, 257,
             1079, 1289, 1290
                                                                           258, 259, 553-566, 1142, 1281, 1282,
I_5Sb
                                                                           1319
   Antimony pentaiodide
                                                              KN<sub>3</sub>
       IV, 864
                                                                 Potassium nitride
In
                                                                     III, 536
    Indium
                                                              KNb03
       III, 1237, 1242
                                                                 Potassium niobate
InSb
                                                                     III, 259
    Indium antimonide
                                                             KO<sub>3</sub> P
       III, 299
                                                                 Potassium metaphosphate
In_20_3
                                                                    III, 174, 257-259
   Indium sesquioxide
      III, 115, 126, 984
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KO3 Ta
                                                            K205Se
   Potassium tantalate
                                                               Potassium selenite
      111, 259
                                                                  III, 581
KO3 V
                                                            K203Si
   Potassium metavanadate
                                                               Potassium metasilicate
      III, 259
                                                                  III, 180, 181, 245, 581
K0<sub>1</sub>Re
                                                           K_2O_3Sn
   Potassium perrhenate
                                                               Potassium stannate
      III, 567
                                                                  III, 1005
K_2Mg0_8S_2
                                                           K_2 O_3 Te
   Magnesium potassium sulfate
                                                               Potassium tellurite
      111, 738
                                                                   III, 581
K2MoOu
                                                            K<sub>2</sub>O<sub>3</sub>Ti
   Potassium molybdate
                                                               Potassium metatitanate
      III, 201, 202, 247, 254, 259-262, 1028
                                                                  III, 185, 246, 259, 260
K2Mo2O7
                                                            K204S
   Potassium bimolybdate
                                                               Potassium sulfate
      III, 263
                                                                  III, 186, 187, 191, 192, 196-200, 246, 252,
                                                                        255-261, 582-586, 1245, 1284, 1321
K2NiO2S2
   Nickel potassium sulfate
                                                            K204Se
      III, 297, 954
                                                               Potassium selenate
                                                                  III, 587
K<sub>2</sub>O
   Potassium oxide
                                                           K20 LTe
      111, 111, 112, 1069, 1292, 1293, 1310,
                                                               Potassium tellurate
            1311
                                                                  III, 587
K203S
                                                            K204W
   Potassium sulfite
                                                               Potassium tungstate
      III, 580
                                                                  III, 204, 205, 247, 254, 257-262, 1029
K203S2
                                                           K_2O_5Se_2
   Potassium thiosulfate
                                                               Potassium pyroselenate
      111, 587
                                                                   III, 588
```

K205Si2 K_3S_4Sb Potassium disilicate Potassium thioantimonate III, 581 III, 572 K205Ti2 $K_{\mu}0_{\mu}Si$ Potassium dititanate Potassium orthosilicate 111, 246 111, 206 K206S2 $K_{4}0_{7}P_{2}$ Potassium dithionate Potassium pyrophosphate 111, 588 III, 175, 176, 245, 258, 259, 572 K207S2 Kr Potassium pyrosulfate Krypton III, 588 IV, 650, 846, 848, 849, 853, 880 K207W2 La Potassium bitungstate Lanthanum III, 263 111, 1224 $K_2O_8S_2Zn$ LaN₃0₉ Zinc potassium sulfate Lanthanum nitrate III, 291 III, 210 K_≈S La2Mo3012 Potassium sulfide Lanthanum molybdate III, 256 111, 203 $K_2S0_{\scriptscriptstyle \frac{1}{4}}$. $MgS0_{\scriptscriptstyle \frac{1}{4}}$. 6 H_20 La₂0₃ Potassium magnesium sulfate Lanthanum oxide III, 275 111, 132, 134, 137, 138 K2S207 $La_20_1 ESe_3$ Potassium pyrosulfate Lanthanum selenate III, 262 111, 988 K_3O_4P Li Potassium orthophosphate Lithium III, 568 111, 1247, 1248

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LiN02
                                                                  Li204S
   Lithium nitrite
                                                                     Lithium sulfate
       111, 641, 642
                                                                         111, 186-190, 216-220, 652-656, 1319
LiNO<sub>3</sub>
                                                                 Li204W
   Lithium nitrate
                                                                     Lithium tungstate
       111, 152-154, 217, 219, 645, 1116, 1142,
                                                                         III, 204, 216, 218-220
             1158, 1178, 1210, 1248, 1280
                                                                  Li205Si2
LiN<sub>3</sub>
                                                                     Lithium disilicate
   Lithium azide
                                                                         III. 208
       III, 640
                                                                  Li206S2
Li OH
                                                                     Lithium dithionate
    Lithium hydroxide
                                                                         111, 656
       111, 641
                                                                 Li 2 OuV
Li0<sub>3</sub>P
                                                                     Lithium vanadate
    Lithium metaphosphate
                                                                         III, 175, 217
       III, 174, 219
                                                                  Li<sub>3</sub>S<sub>4</sub>Sb
Li 2MoOn
                                                                     Lithium thioantimonate
    Lithium molybdate
                                                                         111, 1002
       III, 201, 202, 216, 218, 220
                                                                  Li 3 SbSu
Li<sub>2</sub>0
                                                                     Lithium ammonium sulfate
    Lithium oxide
                                                                         III, 656
       111, 107, 1291, 1308, 1309
                                                                  Li<sub>k</sub>0<sub>k</sub>Si
Li<sub>2</sub>0<sub>3</sub>S
                                                                     Lithium orthosilicate
    Lithium sulfite
                                                                         III, 206
       111, 652
                                                                  MgMoOu
Li 203 Si
                                                                     Magnesium molybdate
    Lithium metasilicate
                                                                         111, 1028
        111, 179-181, 215, 219
                                                                  MgN_2O_4
Li<sub>2</sub>0<sub>3</sub>Ti
                                                                     Magnesium nitrite
    Lithium titanate
                                                                         III, 718
        111, 185
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MgN206
                                                           Mn
                                                              Manganese
   Magnesium nitrate
                                                                  III, 1239
      111, 210, 720-725, 1168, 1182
MgNa_20_8S_2
                                                           MnN<sub>2</sub>0<sub>6</sub>
   Magnesium sodium sulfate
                                                              Manganese nitrate
      111, 738
                                                                  111, 924-927
                                                           MnNa04
Mg0
   Magnesium oxide
                                                              Sodium permanganate
       111, 113-118, 275, 1070, 1293, 1311
                                                                  III, 403
                                                           Mn0
Mg0_3S_2
   Magnesium thiosulfate
                                                              Manganous oxide
      111, 739
                                                                  III, 115, 118, 125-127, 296, 1297, 1316
Mg0<sub>3</sub>Si
                                                           MnO<sub>3</sub>Si
   Magnesium metasilicate
                                                              Manganese metasilicate
                                                                  III, 183, 184, 296
      111, 180, 182, 183, 275
Mg0_{4}S
                                                           Mn0_3Ti
   Magnesium sulfate
                                                              Manganese titanate
       III, 193, 196, 197, 200, 211, 275, 726-737
                                                                  111, 296
                                                           Mn0_{4}S
Mg0_6S_2
   Magnesium dithionate
                                                              Manganese sulfate
       III, 726
                                                                  III, 190, 196, 199, 927-931, 1268
                                                           MnS
MgS
   Magnesium sulfide
                                                              Manganese sulfide
       III, 275
                                                                  III, 144, 146, 296
Mg2O4Si
                                                           MnSe
   Magnesium orthosilicate, Olivine
                                                              Manganese selenide
       III, 206, 207, 275
                                                                  III, 146, 147
Mg_3O_8P_2
                                                           MnTe
   Magnesium orthophosphate
                                                              Manganese telluride
       III, 275
                                                                  III, 147
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Mn_20_4Si
                                                            NNa02
   Manganese orthosilicate
                                                                Sodium nitrite
      III, 207
                                                                   III, 149, 150, 225, 228, 232, 379, 380
Mn_3 O_{i_4}
                                                            NNa0_3
   Mangano-manganic oxide
                                                                Sodium nitrate
      111, 118, 131, 137, 139
                                                                   III, 152, 155-164, 229, 231-235, 385-400,
                                                                         1116, 1142, 1157, 1158, 1245, 1252,
MoNa<sub>2</sub>O<sub>1</sub>
                                                                         1253, 1281
   Sodium molybdate
       III, 201, 202, 223, 228, 236, 238, 239,
                                                            NO
            1028
                                                                Nitric oxide
                                                                   IV, 799, 878, 885, 888, 912, 913
MoO3
   Molybdenum trioxide, Molybdenum anhydride
                                                            N0_2
       III, 107, 109, 110, 111, 113, 124, 133,213
                                                                Nitrogen dioxide
                                                                   IV, 881, 885, 912-916
MoO_{\mu}Rb_{2}
   Rubidium molybdate
                                                            NO2T1
      III, 264
                                                                Thallium nitrite
                                                                   III, 267
MoOn Pb
   Lead molybdate
                                                            NO. Rb
       111, 202, 203, 290, 291
                                                                Rubidium nitrate
                                                                   111, 153, 160, 164, 165, 169, 170, 264,
Mo3Nd2012
                                                                         668-670
   Neodymium molybdate
      III, 203
                                                             NO<sub>3</sub>T1
                                                                Thallium nitrate
Mo_3O_{12}Pr_2
                                                                   III, 153, 160, 165, 170, 172, 173, 266,
   Praseodymium molybdate
                                                                         267, 687, 1124, 1130, 1140, 1282
       111, 203
                                                             NiTi
Mo_3O_1 \approx Y_{\approx}
                                                                Titanium nitrite
   Yttrium molybdate
                                                                    111, 300
       III, 203
                                                             NV
NNaH203S
                                                                Vanadium nitrite
   Sodium sulfamate
                                                                    111, 299
       III, 410
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N_{2}0_{6}Sr
 N_2
                                                                    Strontium nitrate
    Ni trogen
                                                                        III, 154, 163, 167, 169, 280, 803-807,1261
        III, 1243
        IV, 438, 677-684, 835-841, 847, 851, 852,
                                                                N_2O_6Zn
             853, 867-873, 888, 889
                                                                    Zinc nitrate
                                                                        III, 210, 847-851, 1264
 N2NiO6
    Nickel nitrate
                                                                N_2 O_8 U
        III, 946-949, 1272
                                                                    Uranyl nitrate
                                                                        III, 1009-1011, 1192
 N_20
    Nitrous oxide
                                                                N<sub>3</sub> LaO<sub>9</sub>
        IV, 500, 796-799, 878, 887, 888, 908
                                                                    Lanthanum nitrate
                                                                        111, 987
 N_{2}O_{3}
    Nitrous anhydride
                                                                N<sub>3</sub>Na
        IV, 500, 913
                                                                    Sodium azide
                                                                       III, 361
 N_2O_{\rm h}
    Nitrogen tetroxide, Dinitrogen tetroxide
                                                                N<sub>3</sub>NdO<sub>9</sub>
        IV, 500, 799-803
                                                                    Neodymium nitrate
                                                                       III, 985
N_2O_\mu Sr
   Strontium nitrite
                                                                N_3 O_9 Pr
      III, 801
                                                                    Praseodymium nitrate
                                                                        III, 985
N_{2}O_{5}
   Nitric anhydride
                                                                N_3 O_9 Sm
       III, 1298
                                                                    Samarium nitrate
       IV, 500, 501, 803, 913, 917
                                                                        III, 981
N2O6Pb
                                                                N_3 O_9 Y
   Lead nitrate
                                                                    Yttrium nitrate
       III, 163, 168, 172-174, 741-745, 1135,
                                                                        111, 980
             1283
                                                                N_{4}O_{12}Th
                                                                    Thorium nitrate
                                                                        III, 1007
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N,

```
Na
                                                               Na_20_4S
   Sodium
                                                                  Sodium sulfate
       III, 213, 1223, 1226, 1227, 1232, 1235,
                                                                      III, 186, 191-196, 223, 227, 228, 229, 231,
             1239, 1249, 1250
                                                                            233, 236-238, 423-437, 1245, 1246,
                                                                           1284, 1320
Na0<sub>3</sub>P
   Sodium metaphosphate
                                                               Na204S2
       111, 174, 175, 213, 232, 235, 400, 1297
                                                                  Sodium hyposulfite
                                                                      III, 444
Na03V
   Sodium metavanadate
                                                              Na<sub>2</sub>0<sub>4</sub>Se
       III, 235, 400
                                                                  Sodium selenate
                                                                     III, 438
Na2NiO2S2
   Nickel sodium sulfate
                                                              Na<sub>2</sub>O<sub>4</sub>W
       III, 955
                                                                  Sodium tungstate
                                                                      111, 204, 205, 223, 228, 236-239, 1029
Na_20
   Sodium oxide
                                                              Na<sub>2</sub>0<sub>5</sub>Si<sub>2</sub>
       III, 108-110, 1069, 1291, 1292, 1309, 1310.
                                                                  Sodium disilicate
                                                                      111, 208, 223, 237
Na_20_3S
   Sodium sulfite
                                                              Na206S2
       III, 411
                                                                  Sodium dithionate
                                                                     III, 411
Na_2O_3S_2
   Sodium thiosulfate
                                                              Na206S3
       III, 439-444
                                                                  Sodium trithionate
                                                                     III, 444
Na<sub>2</sub>O<sub>3</sub>Si
   Sodium metasilicate
                                                              Na206S4
       III, 179, 181, 182, 222, 232, 237, 422,
                                                                  Sodium tetrathionate
             422
                                                                      III. 444
Na_2O_3Sn
                                                              Na_2O_6S_5
   Sodium stannate
                                                                  Sodium pentathionate
       III, 1005
                                                                      111, 444
Na203Ti
                                                              Na207S2
   Sodium metatitanate
                                                                  Sodium pyrosulfate
       III, 185, 222, 227, 235, 236, 238
                                                                      111, 239
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Nd
Na_20_8S_2Zn
                                                                  Neodymium
   Zinc sodium sulfate
                                                                      III, 1223
       III, 865
                                                               Nd_20_3
Na<sub>2</sub>O<sub>13</sub>W<sub>4</sub>
                                                                  Neodymium oxide
   Sodium metatungstate
                                                                      III, 138
       III, 1029
                                                               Nd_20_{12}Se_3
Na<sub>2</sub>S
                                                                  Neodymium selenate
   Sodium sulfide
                                                                      III, 985
       III, 139, 231, 363, 364
                                                               Ne
Na_30_4P
                                                                  Neon
   Sodium phosphate
                                                                      IV, 832, 843, 844, 848
       III, 226, 232, 404
Na_3 O_h P . 12 WO_3
                                                                  Sodium soaps
   Sodium phosphotungstate
                                                                      111, 457
       III, 1030
                                                               Ni
Na<sub>3</sub>S<sub>3</sub>Sb
                                                                  Nickel
   Sodium thioantimonite
                                                                      III, 1240, 1241
       111, 410, 1002
                                                               NiO
Na_3S_4Sb
                                                                  Nickel oxide
   Sodium thioantimonate
                                                                      111, 116, 122, 125, 126-128, 1317
       III, 410
                                                               NiO3S2
Nau0uSi
                                                                   Nickel thiosulfate
   Sodium orthosilicate
                                                                      III, 1272
       111, 206
                                                               NiO4S
Na_{4}0_{7}P_{2}
                                                                   Nickel sulfate
   Sodium pyrophosphate
                                                                      III, 211, 949, 954, 1272
       III, 175, 176, 222, 235, 236, 407, 408
                                                               NiO6S2
Nb_20_5
                                                                   Nickel dithionate
   Niobium pentoxide
                                                                      III. 1273
       III, 130, 139, 214
```

```
Ni0_6S_4
                                                            02
    Nickel tetrathionate
                                                               0xygen
        III, 1273
                                                                   III, 1239, 1240
 NiaS
                                                                   IV, 663_666, 833_835, 849, 850, 853, 865
    Nickel subsulfide
                                                                       873, 887
        III, 142
                                                            0<sub>2</sub>Pb
 Ni<sub>3</sub>S<sub>2</sub>
                                                                Lead dioxide
    Nickel sulfide
                                                                   III, 118
       III, 142
                                                             0_2Pr
 0 ( see 0<sub>2</sub> )
                                                                Praseodymium oxide
                                                                   III, 133
0Pb
   Lead oxide, Lead monoxide
                                                            02Pu
       III, 122-124, 284, 287-289, 1295, 1296,
                                                                Plutonium oxide
            1298, 1299, 1300, 1307, 1314, 1315
                                                                   III, 134
0Rb2
                                                            0_2S
   Rubidium oxide
                                                                Sulfur dioxide
      111, 113, 1069
                                                                   111, 1300-1307
0Sr
                                                                   IV, 766-795, 878, 881, 885, 887-889, 892-
   Strontium oxide
                                                                        894, 908, 911, 916, 918
      111, 115, 121, 801, 1071, 1294, 1313
                                                             0aSe
0Ti
                                                                Selenium dioxide
   Titanium oxide
                                                                   IV, 533, 796
      III, 300
                                                             0_2Si
0T12
                                                                Silicon dioxide
   Thallium oxide
                                                                    III, 1308-1318
      111, 113, 1293
                                                                   IV, 912
0V
                                                             0<sub>2</sub>Sn
   Vanadium oxide
                                                                Stannic oxide
      111, 299
                                                                   III, 123, 129
                                                            0_2Th
0Zn
   Zinc oxide
                                                               Thorium oxide
       III, 115, 124-126, 1314
                                                                  III, 130, 133-135
```

```
02Ti
                                                            0_3Sb_8
  Titanium oxide, Titanium dioxide
                                                               Antimony trioxide
      III, 108, 109, 114, 116, 118, 121, 122,
                                                                   III, 300
            126-130, 1317
                                                            0₃Se
O<sub>2</sub>U
                                                                Selentrioxide
   Uranium dioxide
                                                                   IV, 534
       111, 131, 133, 134
                                                             03SiSr
0_2Zr
                                                                Strontium metasilicate
   Zirconium oxide
                                                                    III, 182
       III, 114, 116, 117, 119, 121, 122, 125,
            127-131, 1318
                                                             02SiZn
                                                                Zinc metasilicate
03
                                                                    III, 181, 184
   0zone
       IV, 865, 866
                                                             0_3 \, \mathrm{Sm}_2
                                                                 Samarium oxide
0_3 PbSn
                                                                    111, 132, 138
   Lead metastannate
       III, 186, 290
                                                             0.SrTi
                                                                 Strontium titanate
O<sub>3</sub>PbTi
                                                                    III, 185
    Lead metatitanate
       III, 185, 186, 290
                                                              O<sub>3</sub>Ti<sub>2</sub>
                                                                 Titanium sesquioxide
 0_3 PbZr
                                                                     III, 129
    Lead metazirconate
       III, 290
                                                              0 3 W
                                                                 Tungsten trioxide, Tungsten anhydride
 0_3 Pr_2
                                                                     III, 107, 110, 111, 124, 128, 133, 212,
    Praseodymium sesquioxide
                                                                           213, 1030
       III, 133, 138
                                                              0_3Y_2
 0xS
                                                                 Yttrium oxide
    Sulfuric anhydride
                                                                     III, 131-134, 137, 138
       III, 1307
       IV, 537-545, 795, 918
```

```
0 uPbS
                                                            05 Ta2
   Lead sulfate
                                                               Tantalum pentoxide
       III, 189, 195, 198, 199, 284, 290, 291
                                                                  III, 139, 1298
OuPbW
                                                            0<sub>5</sub>V<sub>2</sub>
   Lead tungstate
                                                               Vanadium pentoxide
       111, 204, 205, 291
                                                                  III, 107, 108, 112, 113, 124
0_{\mu}Rb_{2}S
                                                           06N2Sn
   Rubidium sulfate
                                                               Stannous nitrate
       III, 200, 264, 670-672, 1284
                                                                  III, 740
0,Rb2Se
                                                           06PbS2
    Rubidium selenate
                                                              Lead dithionate
       111, 672
                                                                  III, 212
 0,Rb2W
                                                           0_6 PbV_2
    Rubidium tungstate
                                                              Lead vanadate
       111, 264
                                                                 III, 175, 288
 0 uSSr
                                                            0<sub>6</sub>SV
    Strontium sulfate
                                                               Uranyl sulfate
        III, 189, 194, 198, 280
                                                                   III, 1011-1013
 0,ST12
                                                            06S2Sr
    Thallium sulfate
                                                               Strontium dithionate
        III, 201, 266, 688
                                                                  III, 212, 808
  0<sub>μ</sub>SZn
                                                            0_8P_2Pb_3
     Zinc sulfate
                                                               Lead phosphate
        111, 189, 211, 291, 852-864, 1264
                                                                  III, 284, 288
  0 LSiZr
                                                            0aPaSra
     Zirconium orthosilicate
                                                               Strontium phosphate
         III, 206
                                                                  III, 279, 280
 0_5P_2
    Phosphorus pentoxide, Phosphoric anhydride
                                                           0_8S_2Th
                                                              Thorium sulfate
        111, 1298, 1299
                                                                  III, 1007
        IV, 520, 521
                                                           0_8U_3
 05Rb2Ti2
                                                              Uranium oxide
    Rubidium bititanate
                                                                  III, 135, 137-139
        111, 264
```

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011Pr6
                                                          PbSe
    Praseodymium oxide
                                                             Lead selenide
       111, 139
                                                                 III, 290
 012Pr2S3
                                                          PbTe
    Praseodymium sulfate
                                                             Lead telluride
       III, 986
                                                                III, 290
0_{12}Pr_2Se_3
                                                          Pr
    Praseodymium selenate
                                                             Praseodymium
       III, 986
                                                                III, 1226
0_{12}S_3Tl_2
                                                          Рt
    Thallic sulfate
                                                             Platinum
       111, 1275
                                                                III, 1232, 1234
0,2S3U2
                                                          Pu
   Uranium sulfate
                                                             Plutonium
      111, 1002
                                                                III, 1225
012Se3Sm2
   Samarium selenate
                                                             Sulfur
      III, 981
                                                                III, 1240-1242
012S3Yb2
                                                                IV, 667-676, 855, 856, 860, 862, 873-875,
   Ytterbium sulfate
                                                                    887, 888
      III, 211, 980
                                                          SO<sub>2</sub>
                                                             Sulfur dioxide
                                                                 IV, 530-533
   Phosphorus
      IV, 685, 686, 875, 876
                                                          SSn
                                                             Stannous sulfide
Pb
                                                                 III, 144, 145
   Lead
      III, 1228
                                                          STla
PbS
                                                             Thallium sulfide
   Lead sulfide
                                                                 III, 139, 140
      111, 140, 143-146, 288, 1319
```

```
SZn
                                                         Te
    Zinc sulfide
                                                            Tellurium
       III, 140, 143, 144
                                                               III, 1242
                                                               IV, 859, 861, 862, 863, 874, 875, 876
S<sub>2</sub>Si
    Silicon disulfide
                                                         TeZn
       111, 1319
                                                            Zinc telluride
                                                               111, 147
S_3Sb_2
   Antimony trisulfide
                                                         Ti
       III, 142, 143, 145, 146, 300
                                                            Titanium
                                                               111, 1240
Sb
   Antimony
                                                         Tl_2S
       IV, 864, 875, 876
                                                            Thallous sulfide
                                                               111, 1318
Sb_2Se_3
   Antimonium selenide
                                                         Tr
       111, 146
                                                            Tritium
                                                               IV, 842
Se
   Selenium
       III, 1242
                                                            Uranium
       IV, 862, 873, 875, 876
                                                               III, 1240
SeZn
                                                         W
   Zinc selenide
                                                             Tungsten
      III, 146, 147
                                                                III, 1243
Si
   Silicium
                                                         Хe
      III, 1243
                                                             Xenon
      IV, 859
                                                                IV, 833, 846, 848, 853, 880
Sn
                                                         Zr
   Tin
                                                            Zirconium
      111, 1238, 1243
                                                                III, 1224
      IV, 876
Sr
   Strontium
      III, 1261
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GENERAL INDEXES.

FORMULA INDEX

(Organic compounds)

The order of formulae is the same as in the Chemical Abstracts, but in each series of C_1 , C_2 , etc, we have put together the compounds with one other element, two elements, etc.

CBr u

Carbon tetrabromide

I, 213, 314, 721, 771, 819 III, 1058, 1059

CC1_h

Carbon tetrachloride

IV, 652

I, 182, 185, 193, 201-205, 208-213, 219
220, 232-249, 274-277, 285, 289, 293,
298, 299, 301-303, 306-309, 313-324,
705-721, 766-770, 783-788, 809, 816-819,
II, 276-293, 344-346, 359-363
III, 1057, 1058

IV, 3, 4, 650, 651, 652, 659, 684, 745, 753, 762, 778, 799, 803

CF₄

Carbon tetrafluoride, Tetrafluormethane

I, 179, 305 IV, 650, 748

CH_F

Methane

I, 1-27, 179, 354, 355-357

II, 1

IV, 1, 630, 649, 650, 676, 721-724, 731, 766

CO

Carbon oxide

I, 354, 355, 917 IV, 636-638, 663, 683

```
CBr<sub>2</sub>H<sub>2</sub>
   12C0
                                                                Methylenebromide, Dibromomethane
       I, 917
                                                                   1, 192, 209, 218, 223, 302, 304, 669, 779
   13C0
       I, 917
                                                            CBr_3H
                                                                Bromoform
CO2
                                                                   1, 209, 221, 222, 230, 231, 274, 305, 312,
   Carbon dioxide, Carbon anhydride
                                                                       702-705, 765, 766, 782, 783, 807
      1, 355-369, 801-809, 917-920, 938-944
                                                                   II, 274-276, 343, 359
      II, 380-386
                                                                   IV, 652, 671, 685, 799
      III, 1069-1071
      IV, 5, 6, 638-646, 648, 649, 651, 654, 659,
                                                             CC1F3
           664-666, 684, 691-702, 727-729, 732,
                                                                Monochlortrifluormethane
           780-785, 797-799, 815
                                                                    IV, 748
 CS 2
                                                             CC1H<sub>3</sub>
    Carbon disulfide
                                                                Methyl chloride
       1, 370-385, 810-822, 920-937, 944-947
                                                                    I, 182, 206, 301, 668, 801-806
       II, 386-398
                                                                    II, 258
       III, 1074, 1075
                                                                    IV, 691, 747, 750, 777, 778
       IV, 6, 654, 660, 669-671, 686, 762
                                                             CC12F2
CH<sub>2</sub>I<sub>2</sub>
                                                                Difluorodichlormethane
   Methylene iodide, Diiodomethane
                                                                    I, 206, 305, 324
      1, 184, 202, 203, 205, 209, 223, 320, 304,
                                                                    IV, 748
      305, 670, 779, 807
      11, 260, 261, 342, 355
      III, 1056
      IV , 671. 685
                                                            CC12H2
                                                                Methylenchloride, Dichloromethane
CBrF<sub>3</sub>
                                                                   1, 181, 191, 207, 208, 223, 301, 302, 303,
   Trifluorobromomethane
                                                                       304, 669, 779, 810
       I, 807
                                                                   II, 259, 260
                                                                   IV. 3
CBrH<sub>3</sub>
    Methylbromide
                                                             CC120
       I, 180, 183, 668
                                                                Phosgene
                                                                    I, 205, 369-370, 809-810
CBr<sub>2</sub>F<sub>2</sub>
                                                                   III, 1071-1073
    Difluorodibromomethane
                                                                    IV, 748, 750
       1, 807
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CC13H
                                                              CH2O2
    Chloroform
                                                                 Formic acid
       I, 181, 184, 191-193, 200, 204, 205,
           207-209, 219, 220, 222, 224-230,
           272-274, 286, 288, 289, 292, 293,
           299-303, 305-312, 671-701, 760-765,
           779-782, 811-815
       II, 261-274, 342, 343, 355-358
       III, 1056
       IV, 3, 4, 652, 659, 715, 762, 804, 805,
            807
 CF oHo
    Methylene fluoride
        I, 302
 CF 3H
    Fluoroform
                                                             CH<sub>3</sub> I
        I, 179, 302, 305
                                                                Methyl iodide
CHI3
   Iodoform
      I, 231, 293, 305, 313, 766
      111, 1056
                                                                   IV, 745
      IV, 659, 671, 758
                                                            CH<sub>3</sub> T
CHN
                                                                Tritiummethane
   Hydrocyanic acid, Cyanhydric acid
                                                                   I. 1
      I, 961, 980, 1085
                                                            CH<sub>u</sub>0
      II, 865
                                                                Methyl alcohol
       IV, 61-63
CH_2N_2
   Cyanamide
       I, 1061, 1085
       IV, 67
CH<sub>2</sub>0
   Formaldehyde
       11, 463, 606
       IV, 18-20
```

11, 206, 207, 209, 210, 211, 213, 215, 216, 218, 219, 241, 245, 246, 247, 248, 249, 250, 355, 359, 364, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 378, 395, 451, 456, 460, 463, 546, 555, 558-560, 570, 627, 813, 814, 816, 817, 825, 826, 832, 833, 836, 838, 839, 841, 843, 845, 846, 855, 858, 862, 865, 973, 983, 1004, 1005, 1008, 1013, 1045, 1051, 1069-1071, 1077, 1085, 1183-1185 III, 1207-1209 IV , 346-355, 741, 749 I, 181, 183, 207, 208, 223, 300, 302, 663, 669, 760, 779, 810 II, 258, 259, 355

II, 1,3,5-8, 15, 22, 23, 25, 27, 28, 30-35, 41, 43, 44, 46, 48, 51-59, 106, 120-122, 128-131, 133, 135, 136, 141, 143, 258-263, 274, 276-280, 294, 295, 298-300, 311-319, 322-328, 341, 380, 386-383, 398-400, 409, 411, 413, 414, 416, 419, 420, 421, 423, 431, 432, 437, 463, 465, 466, 468, 473, 476, 486, 487, 488,

CH₄S

CH₅N

CH5 N3

 $C0_{\,\textrm{g}}N_{\textrm{t}_{\textrm{t}}}$

CBrC1H2

CBrC12H

11, 274, 359

490-493, 495, 497, 501-505, 575-578, 585, 586, 588, 591, 594-596, 598, 599, 602, 603, 607, 610, 612, 650-658, 664, 672, 678, 684, 688, 692-695, 699, 700, 868, 870-875, 877-887, 891, 892, 894-896, 898, 899, 913, 1014-1016, 1045-1016, 1045-1051, 1095-1107 III, 1162-1176 IV, 151-170, 647, 650, 656, 684, 708, 709, 716, 730, 737, 743, 749, 794, 811, 825, 828 Methane-thiol, Methylmercaptan II, 3, 894 Methylamine 1, 516, 530, 532, 1061, 1090 II, 650 III, 1116-1120 IV, 68, 69 Guanidine IV, 733 Tetranitromethane I, 618-786 Chlorobromomethane, Methylene chlorbromide I, 807 II, 259 Dichlorobromomethane I, 192, 313, 702, 783

CC1F2H Difluorochlormethane I, 206, 305 CCIH6N Methylamine chlorhydrate IV, 140 CC1H6N3 Guanidine hydrochloride, Guanidium chloride IV, 145, 733 CC12FH Monofluorodichloromethane I, 670 IV, 4 CC1xHxSi Methyltrichlorosilane 1, 313, 760 CC1, NO2 Chlorpicrine 1, 596, 598, 605, 606, 1206 11, 899, 1008 CHNO Cyanic acid IV, 109 CHN₃ 0₆ Trinitromethane I, 786 CH₂ NO Formamide 1, 608, 641, 940, 845, 1002, 1085, 1089, 1090, 1137, 1141, 1145 II, 868-870, 973, 974

III, 1140-1141

IV, 109, 110, 735

```
CH<sub>3</sub>NO<sub>2</sub>
                                                                CH_{\mu}N_{\mu}O_{2}
   Methyl nitrite
                                                                   Nitroguanidine
       1, 586, 600
                                                                       I, 1259
   Ni tromethane
                                                                       IV, 828
       I, 587, 588, 596, 600, 601, 603, 605-08,
                                                                CH_4O_3S
          617, 618, 630, 633, 634, 635, 636, 637,
                                                                   Methylsulfonic acid, Methanesulfonic acid
          638, 639, 640, 641, 649, 783, 785, 786,
                                                                       IV, 434, 795
          789, 791, 792, 793, 794, 795, 946, 991,
          1002, 1005, 1006, 1015, 1016, 1030,
                                                                CH<sub>5</sub>NO<sub>2</sub>
          1036, 1039-1041, 1088, 1090, 1138, 1206
                                                                   Ammonium formate
      II, 895-897, 1005, 1006
                                                                       IV, 131
      III, 1145
                                                                CH<sub>5</sub>NO<sub>3</sub>
      IV, 128, 802
                                                                   Ammonium bicarbonate
                                                                       I, 1153
CH<sub>3</sub>NO<sub>3</sub>
                                                                       IV, 134
   Methyl nitrate
       1, 587, 588, 595, 601, 603, 785, 789, 791,
                                                                CH6N2O2
          792, 795, 946, 993, 994
                                                                   Ammonium carbamate
       11, 894
                                                                       I, 1153
       IV, 128
                                                                CH6NhO3
CH4N20
                                                                   Guanidine nitrate
    Urea
        1, 940, 1053, 1085, 1090, 1119, 1153-1155
                                                                       I, 1145, 1259
        II, 874, 875, 919-925, 983-990
                                                                      III, 1158
                                                                       IV, 828
        III, 1142, 1143
        IV, 112-120, 735, 736, 742, 827
                                                               CHaNaO3
                                                                   Ammonium carbonate
                                                                      IV, 133, 134
                                                               CBH<sub>5</sub>O<sub>2</sub>
CH4N2S
                                                                   Methylboric acid
    Ammonium thiocyanate
                                                                      IV, 437
       1, 1009, 1145, 1167
       II, 878
                                                               CC1H2NO2
       III, 1144
                                                                   Chlonitro-methane
       IV, 137, 138, 734, 735, 793
                                                                      1, 794, 795, 1005
    Thiourea
       1, 1167
                                                                CC1H<sub>6</sub>N<sub>3</sub> O<sub>4</sub>
       11, 875
                                                                    Guanidine perchlorate
       IV, 120, 121, 736
                                                                        IV, 145
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```
CHI3S2h
                                                        CaH6
   Iodoform trisulfide
                                                           Ethane
      IV, 758
                                                              1, 1-3, 27, 179, 180, 357-59, 386, 516,586
                                                              11, 1, 2, 146
CH_8N_4O_4S
                                                              IV, 1, 630, 631, 677-679, 687-690, 724,
   Aminoguanidinium bisulfate
                                                                  725, 766-768, 796
      IV, 145
                                                        Cala
CaBra
                                                           Diiodacetylene
   Dibromacety lene
                                                              IV, 672
      IV, 653
                                                        C2I4
C2Br4
                                                           Tetraiodethylene
   Tetrabromethylene
                                                              IV, 672
      IV, 672
                                                        C2N2
C_2C1_4
                                                            Cyanogen
   Perchloroethylene, Tetrachloroethylene
                                                               IV, 799
      1, 202, 218, 318, 319, 331, 332, 333, 336,
         338, 747, 773, 795
                                                        C2BrH3
      11, 325, 373
                                                            Vinyl bromide
                                                               I, 181, 207, 795
CaCl6
                                                               11, 322
   Hexachloroethane, Perchloroethane
      I, 186, 191, 195, 201, 215, 260, 279, 295,
                                                        C2BrH5
         298, 333, 735, 773, 820
                                                            Ethyl bromide
      II, 347, 368
                                                               1, 181, 182, 185, 194, 207, 208, 213, 249,
                                                                  288, 303, 325, 326, 722, 810, 819, 820
C2F6
                                                               II, 294, 295, 364
   Perfluorethane
                                                               III, 1059-1061
      1, 179, 305
                                                               IV, 653
C2H2
   Acetylene
                                                        CaBraHa
       1, 24, 38, 39, 94, 98, 355, 367, 409
                                                           Dibromethylene cis
      IV, 2, 636, 663, 713, 727
                                                              I, 338
                                                              II, 323
CaH4
                                                           Dibromethylene trans.
   Ethylene
      1, 24, 32, 70, 71, 94, 96, 206, 355, 365_
                                                              I, 338
                                                              II, 323
         366, 407, 530, 600
                                                           Acetylene dibromide ( mixture )
      IV, 2, 633, 634, 647, 649, 663, 681, 682,
          731
                                                              I, 794, 795
```

C2Br2H4

Ethylene bromide, 1,2-Dibromethane

1, 186, 195, 207, 215, 219, 258, 259, 279, 283, 287, 288, 294, 302, 310, 316, 317, 325, 326, 328, 329, 330, 331, 728, 729, 730, 771, 772, 790

II, 304-307, 346, 366, 367 III, 1061

IV, 659, 672, 685, 799

CaBruHa

Acetylenetetrabromide, Tetrabromethane sym.

1, 327, 328, 332, 807

II, 310, 311 IV, 800

CaClF3

Trifluorochloroethylene solid, Trifluorochloroethylene liquid polymer

I, 338

C2ClH3

Chloroethylene, Polyvinyl chloride

I, 338, 795

C2C1H5

Ethyl chloride

I, 180, 207, 304, 325, 721, 789, 807 IV, 750

C2C12H2

Dichloroethylene cis., Acetylene dichloride cis.

1, 327, 330, 332, 338, 742, 743, 744 Dichloroethylene trans.

I, 327, 330, 332, 338, 744, 745 Dichloroethylene (mixture)

I, 261, 338

II, 322

1,1-Dichlorethylene

I, 338

II, 322

Ethylene Dichloride, Dichlorethane 1,2

I, 195, 213, 214, 218-220, 250-258, 277, 278, 283-288, 294, 299, 304, 315, 326-328, 725-728, 771, 789, 790, 809, 820

II, 299-304, 364-366

IV, 5

Ethylidene chloride

1, 191, 208, 258, 279, 294, 304, 310, 325, 328, 810

II, 298

C2Cl3F3

1,1,2-Trifluor-1,2,2-trichlorethane
IV, 653

CaClaH

Trichloroethylene

I, 219, 311, 328, 333, 334, 338, 746, 747, 795, 810

11, 323, 324, 373

CaClaHa

1,1,1-Trichloroethane

1, 215

1,1,2-Trichloroethane

I, 327, 331, 730

II, 308, 367

Methylchloroform

1, 331

 $C_2C1_\mu F_2$

Difluortetrachlorethane asym.

IV, 653

```
C2Cl4H2
                                                         C2H3N
   Tetrachlorethane sym, Acetylene tetrachloride
                                                            Acetonitrile
      1, 186, 195, 201, 203, 204, 294, 312, 317,
                                                                1, 518, 524, 526, 527, 528, 531, 532, 533,
          327, 328, 331, 332, 731_733, 772, 790,
                                                                   534, 540, 542, 543, 544, 559, 563, 564,
         809
                                                                   567, 568, 580, 766, 771, 773, 778, 791,
      II, 308-310, 367
                                                                   944, 948, 967, 968, 980, 984, 987, 988,
      111, 1061
                                                                   1054-1056, 1086-1088
      IV, 672
                                                                II, 688-690, 865, 866
   1,1,1,2-Tetrachlorethane
                                                                III, 1110-1112
      1, 731
                                                                IV, 63-66, 749, 763
C2C1402
                                                         C2HLI2
   Perchlormethyl formate
                                                             Ethylidene iodide
      II, 644
                                                                I, 259
                                                                IV, 672
C2C15H
                                                            Ethylene iodide
   Pentachlorethane, Ethane pentachloride
                                                                I, 730
      1, 215, 221, 260, 288, 301, 313, 327, 331,
                                                                IV, 672
         332, 333, 733-734, 790
      11, 311, 346, 368
                                                         C_{R}H_{\mu}N_{\mu}
      IV, 3
                                                            Dicyandiamide
                                                                1, 1061
C2F2H4
                                                                IV, 733
   Ethylidenedifluoride
      I, 324
                                                         C_2H_4O
                                                             Metaldehyde
C_2H_2I_2
                                                                I, 844
   1,2-Biiodethylene
                                                             Ethylene oxide
      I, 746
                                                                1, 407, 726, 842
C_{2}H_{2}O
                                                                IV, 10, 651, 656, 780
   Ketene
                                                             Acetaldehyde
      I, 855
                                                                1, 450, 484, 680, 824, 842, 850
                                                                II, 463_465, 544
C2H2Ou
                                                                IV, 21-23
   Oxalic acid
      11, 551, 1048, 1060, 1078
      IV, 392
```

$C_2H_4O_2$ Met

Methyl formate

I, 388, 389, 395, 408, 409, 410, 466, 500, 668, 722, 735, 747, 828, 830, 842, 846, 879, 933, 980

II, 575, 626

111, 1093

IV, 748

Acetic acid

11, 207, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219-227, 241-243, 245, 246, 247, 248, 249, 250, 253, 257, 355, 356, 359, 360, 364, 365, 366, 367, 369, 370, 371, 372, 373, 374, 375, 379, 385, 395, 396, 451, 452, 455, 456, 458, 460-463, 544, 545, 547-549, 556, 558-561, 564, 566, 570, 625-629, 632, 635-639, 641, 643, 644, 646, 647, 649, 813-815, 817-822, 825-829, 831, 832-834, 836, 839, 841-844, 846-852, 855, 856, 858, 859, 862, 863, 865-867, 973-975, 983, 984, 990, 991, 998, 999, 1004-1006, 1008-1010, 1045, 1051, 1052, 1059, 1066, 1067, 1070, 1071, 1074, 1076, 1077, 1080, 1083, 1090, 1092, 1183-1189 III, 1210-1216

IV, 355-377, 661, 713, 717, 741, 742-744,

747, 749, 755, 795, 804, 808-810, 814,

$C_2H_4O_3$

Glycolic acid IV, 396

820-822, 829

C2HhS

Ethylene sulfide

I, 395, 847

II, 437

C2H5I

Ethyl iodide

I, 186, 194, 195, 249, 277, 302, 314, 315, 325, 326, 723-725, 771, 789, 820

II, 295-298, 364

III, 1061

IV, 4

 $C_{\,2}H_{5}\,N_{\,2}$

Biuret

IV, 120

CaH60

Dimethyl ether

I, 407, 409, 668, 918

III, 1075

IV, 654, 703, 715, 718, 730, 732, 748, 756, 779, 799

Ethvl alcohol

II, 1-5, 8, 9, 15-17, 23, 25-27, 29-33, 35, 36, 41-45, 50, 60-73, 107-110, 125, 128, 131, 136, 137, 144, 145, 258-260, 263-269, 275, 281-286, 294, 296, 298, 300, 301, 307, 311-320, 322-328, 330-333, 335, 338, 341, 380, 381, 388-392, 400-406, 409, 411-416, 418-423, 425, 428, 431, 432, 433, 435, 437, 463-466, 468-470, 477-480, 487, 489, 490, 492-496, 498, 499, 502, 503, 505, 576-530, 585, 588-591, 594, 595, 596, 598-600, 602-604, 606, 609, 612, 650-655, 658-

660, 667-669, 674, 676, 678-680, 682, 684, 685, 687-689, 691, 692-700, 868, 870-888, 891-894, 896, 899, 900, 907-910, 912, 913, 1016-1021, 1051-1059, 1095-1098, 1108-1117

III, 1176-1192

IV, 171-207, 657, 661, 709, 710, 716, 737, 743, 749, 765, 794, 796, 825

CaH60a

Glycol, Ethylene glycol

II, 12, 21, 28, 39, 43, 45, 46-49, 95, 113, 117-121, 125, 129-131, 133-135, 138, 139, 141, 142, 143, 144, 145, 261, 275, 306, 308, 311, 313, 314, 316, 317, 320, 321, 325, 326, 328, 330, 332, 334, 336-340, 382, 410, 411, 415, 416, 418, 421, 422, 424-426, 428-430, 435, 436, 466, 467, 491, 492, 494-496, 500, 503, 504, 577, 582, 588-593, 596-602, 605, 606-611, 662, 664-668, 670, 671, 682, 683, 695, 878, 886, 903, 908, 910, 912, 913, 1026, 1129-1131, 1133, 1134

III, 1200-1202

IV, 245-247, 712, 795

C₂H₆S

Ethyl mercaptan, Ethane-thiol

II, 5, 14, 30, 32, 106, 408, 413, 419, 575, 1113

Methyl sulfide

I, 388, 408, 722, 830, 833, 846, 1005 II, 419

C2H7N

Dimethylamine

I, 516, 1061

II, 813

111, 1123

IV, 73

Ethylamine

1, 531, 546, 1061

II, 813

III, 1120-1122

IV, 69, 70, 707

C2H704

Ammonium acid formate

IV, 131

CaHaNa

Ethylene diamine

I, 521, 568, 569, 572, 763, 856, 978, 1060, 1062, 1063, 1092

11, 656, 657, 701, 702, 816

IV, 84, 85

C2BrC1H4

Ethylenechlorobromide

I, 218, 730

11, 307, 367

C2BrCl2H

Dichlorbromethylene as.

11, 325

Dichlorbromethylene cis.

II, 325

C₂BrH₂I

Bromoiodethylene cis

I, 746

11, 323

CaBraHOa

```
C2BrH3O2
   Monobromacetic acid
      II, 246, 250, 251, 255, 376, 377, 378, 379,
      IV, 419, 420
   Bromacetic acid
      11, 1009, 1087
      III, 1220, 1221
C2BrHu I
   Ethylene bromiodide cis.
      II, 367
CaBrHs0
   Ethylenbrohydrin
      11, 21, 43, 116, 121, 125, 127, 307, 308,
          313, 320, 325, 329, 410, 420, 589
C2Br2C1H
   Chlordibromethylene
      II, 325
C2Br2Cl2H2
   Dichlorodibromoethane sym.
      I, 333
C2Br2Cl2H
   1,1-Dichloro-1,2,2-tribromoethane
   1,2-Dichloro-1,2,2-Tribromoethane
      1, 333
CaBraH0
   Bromal.
      II, 473
      IV, 30-32
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Tribromacetic acid
      II, 1084
      IV, 420
C2ClH2I
   Chloriodethylene cis,
       11, 323
   Chloriodethylene trans.
      II, 323
C2ClH30
   Acetyl chloride
      II, 473, 626
      III, 1091
      IV, 750, 751
C2C1H3O2
   Monochloracetic acid
      II, 211, 215, 216, 217, 218, 235, 246, 248,
          249, 250, 251, 254, 255, 257, 359, 368,
          370, 372, 375, 376, 377, 378, 379, 386,
          453, 455, 552, 563, 565-570, 626, 628,
          631, 639-642, 648, 649, 978, 979, 986,
          990, 994, 998, 999, 1067, 1068, 1076,
          1078, 1081, 1083-1089, 1093, 1094,
          1187, 1188, 1190, 1214, 1232
      111, 1219
      IV, 414, 415, 755, 759, 810, 815, 823
CaC1HaNO
   Monochloracetamide
      1, 1165
      11, 983
      IV, 112
```

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C2ClH50
                                                            Dichlorethanol
   Ethylenchlorhydrin, 2-Chlorethanol
                                                               11, 48, 117, 118, 120, 121, 125, 275, 308,
      II, 13, 21, 24, 25, 28, 32, 40, 42, 43, 45,
                                                                   317, 318, 321, 325, 329, 330, 410,
          47, 48, 105, 115, 116, 117, 118, 120,
                                                                   411, 422
          121, 125, 127, 129, 130, 132, 133, 143,
                                                        C2Cl2HLS
          275, 304, 307, 308, 312, 313, 316, 317,
                                                           Di ( chlormethyl ) sulfide
          318, 319, 320, 321, 324, 325, 326, 329,
                                                              II, 418
          330, 337, 382, 410, 415, 417, 419, 420,
          422, 437, 490, 495, 576, 586, 589, 591,
                                                        C2Cl2H6Si
          597, 604, 871, 899, 1124, 1127, 1129,
                                                           Dimethyldichlorosilane
          1136
                                                              1, 313, 760
      IV, 275
                                                        CaClaHO
   Monochloromethyl ether
                                                           Chloral
      1, 390, 395, 409, 926
                                                              1, 397, 400, 418, 736, 738, 740, 748, 852,
                                                                 853, 1006
                                                              11, 469-472, 506, 507, 544
C2ClH8N
                                                              IV, 26-30
   Ethylammonium chloride, Ethylamine chlorhydra-
                                                        C2Cl3HO2
      I, 1061
                                                           Trichloracetic acid
      IV, 141
                                                              11, 218, 236, 246, 250, 255, 368, 376, 377,
C2Cl2H2O2
                                                                  378, 379, 453, 454, 460, 545, 553, 563,
   Dichloracetic acid
                                                                  565-571, 626, 628, 631, 632, 639-642,
      11, 206, 236, 245, 364, 453, 553, 563, 570,
                                                                  645-649, 834, 837, 841, 864, 979, 980,
          626, 627, 628, 631, 863, 987, 990,
                                                                  987, 988, 990, 1004, 1012, 1013, 1056,
          1188, 1215, 1232, 1233
                                                                  1066-1069, 1074, 1075, 1079-1091, 1093,
      IV, 416, 417, 810, 811, 824
                                                                   1094, 1188, 1191, 1208, 1215, 1217,
                                                                  1232-1235
CaClaHaNO
                                                              III, 1220
   Dichloroacetamide
                                                               IV, 417-419, 756, 811, 824
      I, 1165
                                                        C2C13H30
C2Cl2H40
                                                           Trichloromethyl ether
   Dichlormethyl ether s.
                                                              I, 845, 959
      1, 736, 831, 845, 959
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II, 418

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C2C13H3O2
                                                               II, 870, 871, 914-918, 974-982
   Chloral hydrate
                                                              III, 1141-1142
      11, 115, 140, 272, 382, 880, 888, 889,
                                                               IV, 111, 112, 657, 742, 746, 826
          1036, 1071, 1116, 1143
                                                        CaH5NOa
C2F3HO2
                                                           Glycine
   Trifluoracetic acid
                                                              IV, 421, 422
       IV, 414
                                                           Glycolamide
                                                              IV. 277
CaHaNS
                                                           Ethyl nitrite
   Methyl thiocyanate
                                                              1, 587, 600, 789, 795, 946, 1085
      1, 543, 642, 1168
                                                              11, 894
      II, 878
                                                           Ni troethane
   Methyl isothiocyanate
                                                              1, 596, 598, 601, 630, 793, 794, 1005,
      I, 1018, 1022, 1168
                                                                  1015, 1016, 1038, 1040, 1041, 1088,
C 2H4N2O6
                                                                 1039, 1090, 1149, 1150, 1174, 1175,
   Dinitroglycol
                                                                 1179, 1206, 1207
      1, 730, 992, 1207
                                                              II, 897, 898, 1006, 1007
CaHaDO
                                                        C2H5NO3
   Ethyl deutero alcohol
                                                           Ethyl nitrate
      IV. 718
                                                              1, 588, 595-596, 598, 601, 603, 605-606,
                                                                 617, 783, 791, 792, 793, 794, 795, 796,
C2H5 10
                                                                 800, 945, 993, 994, 1005, 1206
   Ethylene iodhydrin, Iodethanol
                                                              II, 894
      11, 117, 121, 321, 330, 337, 411, 424, 429
                                                              IV, 128
      IV, 276
CaHs NO
   Acetaldoxine
                                                       CaH5NO4
      IV, 322
                                                          Glycol mononitrate
                                                              II, 486
CaHe NO
   Acetamide
                                                       CaH6Na0
      1, 598, 599, 607, 608, 633, 634, 635, 636,
                                                          Methyl urea
         637, 638, 639, 640, 641, 648, 649, 655,
                                                             I, 655, 1155
         659, 773, 790, 791, 793, 794, 795, 796,
                                                             II, 926
         797, 798, 799, 800, 940, 993, 994, 995,
         996-1001, 1003-1006, 1017, 1018, 1021,
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1022, 1024, 1026-1028, 1031, 1038-1051, 1100, 1101, 1104, 1106, 1108-1110, 1113,

1119, 1140, 1145, 1146, 1147

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C2H604S
                                                         CaHloNaO6
   Dimethyl sulfate
                                                             Ethylene diamine dinitrate
      I, 413, 420, 423, 424, 427, 490, 491, 497,
                                                                IV, 827
         498, 500, 501, 511, 735, 753, 755-757,
                                                         C2BrC1H3N
          834, 837, 898-900
                                                             Chlorobromacetamide
      11, 612, 649
                                                                I, 1165
      IV, 60, 818
                                                         CaBrHaNO
                                                             Bromoacetamide
                                                                I, 1165
CaH60aS
                                                         C2Br3H2NO
   Ethylsulfonic acid
                                                             Tribromacetamide
      IV, 434
                                                                I, 1165
C2H6O3Si
                                                         C2Cl3H2NO
   Methyl silicate
                                                             Trichloroacetamide
      I, 847
                                                                I, 991, 1009, 1165
C2H2NO
                                                         CaHaNOs S
   Ethanolamine
                                                             Taurine
       II, 21, 24, 45, 46, 47, 48, 49, 104, 114,
                                                                IV, 425
           116, 117, 118, 119, 120, 121, 125, 129,
                                                         C2C1H3 INO
           132, 133, 134, 140, 141, 142, 143, 144,
                                                             Chloriodacetamide
           276, 329, 330, 331, 332, 334, 337, 338,
                                                                I, 1165
           410, 411, 419, 420-422, 424, 426, 429,
           436, 662, 664-667, 670, 671, 695, 1034
                                                          C_3F_6
           1036, 1135
                                                             Perfluoropropylene
                                                                I, 305, 324
 CaH7NOa
    Ammonium acetate
                                                          C_3H_u
       IV, 132, 133
                                                             Allylene
                                                                IV, 713, 731
 C2H8N2O4
    Ammonium oxalate
                                                          C<sub>3</sub>H<sub>6</sub>
        IV, 135
                                                             Trimethylene
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IV, 731

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C<sub>3</sub>H<sub>6</sub>
                                                        C3Br2H6
                                                            Propylene dibromide, Dibromopropane
   Propylene
      1, 33-38, 44, 45, 52, 94, 96, 97, 98, 366
                                                               1, 196, 283, 286, 287, 314, 329, 335, 737,
                                                                  748
      111, 1035
      IV, 635, 648, 731
                                                               11, 313, 369
                                                            Trimethylene bromide
C_3H_8
                                                               I, 737, 748, 791
   a-Propane
                                                               II, 314, 369
      1, 3-10, 27, 42, 43, 354, 360-361, 386
      11, 3, 146, 206
                                                         C3Br3H5
      IV, 631, 632, 647, 680, 690, 725, 726, 731,
                                                            Tribromhydrin, 1,2,3-Tribrompropane
          760
                                                               I, 295
                                                               II, 370
C3BrH5
   Allylbromide
                                                         C3C1H5
                                                            1-Chlorpropylene cis.
      I, 187, 336, 748, 795
      II, 326, 373
                                                               II, 325
   2_Brompropylene
                                                            1-Chlorpropylene trans.
      II, 325
                                                               11, 325
C3BrH7
                                                        C3ClH5
   Isopropyl bromide
                                                            Chlorpropene, Chlorpropylene
      1, 191, 310, 334, 736, 791, 810
                                                               I, 181, 207, 747
      11, 312, 368
                                                               II, 325
      IV, 779
                                                            Allyl chloride
   Propyl bromide
                                                               1, 748, 810
      1, 187, 208, 325, 334, 736, 791
                                                               II, 325, 373
                                                               III, 1062
      11, 311, 312, 368
      IV, 778
                                                         C3C1H7
C3Br2H4
                                                            Isopropyl chloride
   Dibrompropylene cis.
                                                               I, 181, 207, 735, 810
      II, 323
                                                               II, 311, 368
                                                               III, 1062
                                                                IV, 750
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Propyl chloride
                                                         C_3H_3N
       I, 181, 208, 302, 334, 735, 791, 810
                                                            Acrylonitrile
       II, 311, 368
                                                                I, 545, 767, 778
       III, 1062
                                                                II, 694
       IV, 750
                                                                III, 1112
                                                                IV, 63, 67, 763
C3Cl2H4
    Dichlorpropylene trans.
                                                         CaHuNa
       II, 326
                                                            Pyrazole
                                                                1, 955, 960
CaClaH6
                                                                II, 775
   Acetondichloride, 2,2-Propanedichloride
      I, 187, 208, 737
                                                         CaHu0
      II, 313, 369
                                                            Acrolein
   Propylenechloride
                                                                I. 926
      I, 216
                                                                IV, 23
      I1, 313
                                                         C_3H_4O_3
      IV, 3
                                                            Pyruvic acid
   Isopropylene chleride
                                                                11, 244, 245, 246, 248, 250, 373, 375, 378,
      1, 304, 317, 328, 331, 335
                                                                   455, 457, 1189
C_3Cl_3F_5
                                                                IV, 814
    1,1,1,3,3-Pentafluor-2,2,3-trichlorpropane
                                                         C_3H_4O_4
       IV, 653
                                                            Malonic acid
                                                                11, 453, 1048, 1054, 1060, 1066, 1217
CaClaH5
    Trichlorohydrin, Trichloropropane-1,2,3
                                                                IV, 393
       1, 203, 221, 222, 335, 737, 791
                                                         CaHs I
       11, 314, 370
                                                            Allyliodide
    Trichloropropane-1,2,2
                                                                1, 199, 218, 748, 773, 795
       I, 737
                                                                11, 326, 373
                                                                IV, 3
 CsH2Ng
    Malonitrile
                                                         C_3H_5N
       I, 1058, 1059
                                                             Propionitrile
                                                                1, 518, 524, 528, 534, 540, 544, 773, 944,
                                                                   953, 961, 984, 987, 1054, 1057
                                                                II, 691
                                                                111, 1112
                                                                IV, 63, 67
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CaH60

Acetone

I, 388-392, 395, 396, 399, 404-404, 406, 408-410, 414, 419-421, 423, 427, 450-455, 484, 490, 493, 506, 507, 512, 514, 515, 668-670, 681-692, 703, 704, 709-712, 722, 723, 725-728, 730, 731, 733, 734, 735-738, 741-743, 745, 746, 748, 749, 751, 752, 759, 824-827, 831, 835, 838, 840, 842, 845, 847, 852, 855-861, 919, 927-933, 961-965, 1007-1012

II, 473-486, 509-517, 546-555

III, 1083-1088

IV, 32-47, 651, 656, 705, 716, 730, 786

C_3H_60

Trimethylene oxide

IV, 800

Propylene oxide

1, 388, 407, 408, 410, 669, 824

IV, 10

Propionaldehyde, Propanal

1, 735, 926, 1006

Allyl alcohol

II, 12, 15, 21, 25, 32, 40, 42, 43, 44, 95, 113, 292, 297, 303, 306, 312, 313, 314, 315, 316, 317, 318, 319, 320, 324, 325, \$\tilde{\text{\text{2}}}266, 328, 409, 413, 414, 419, 436, 471, 489, 492, 500, 502, 576, 585, 589, 591, 596, 607, 894, 896, 899, 1119, 1133

111, 1200

IV, 239, 240, 717

C3H602

Ethyl formate

1, 388, 389, 393, 395, 408-410, 466, 486, 668, 696, 736, 738, 743, 745, 748, 847, 879, 933, 1030

II, 575, 627

III, 1093-1095

IV, 56, 705, 748

Methyl acetate

I, 393, 395, 408, 409, 422, 467, 468, 696, 704, 716, 734, 736, 744, 745, 749, 828, 828, 859, 879, 881, 882, 919, 934, 980 II, 577, 613, 627, 628

III, 1096, 1097

IV, 56, 57, 705, 718, 748

Propionic acid

II, 207, 210, 211, 216, 217, 218, 227, 228, 243, 245, 246, 247, 248, 249, 250, 253, 257, 355, 359, 366, 367, 369, 370, 371, 372, 373, 375, 378, 452, 455-457, 556, 561, 642, 643, 644, 814, 822, 832, 833, 836, 841, 843, 852, 855, 855, 860, 876, 973, 984, 1004, 1011, 1046, 1059, 1070, 1185, 1189

IV, 377-381, 713, 749, 814

Dioxolane-1,3

IV, 11, 801

Oxyacetone

IV, 240

$C_{3}H_{6}O_{3}$

Lactic acid

II, 235, 244, 248, 386, 1187

IV, 397

Dioxyacetone monomer

II, 1137

Dioxyacetone dimer, 1137

Trioxymethylene, Trioxane sym. IV, 11, 801 Methyl carbonate 1, 394, 398, 400, 410, 416, 419, 702, 720, 736-738, 740, 747, 748, 831, 833, 846, 852, 936 II, 596 III, 1104 IV, 56 C3H7I Propyliodide I, 195, 218, 736, 791 II, 312, 369 Isopropyliodide 1, 313, 334, 737, 773, 791 II, 313, 369 C3H7N Allylamine II, 656 C3H80 Propyl alcohol II, 2, 4, 9, 15, 18, 23, 25, 30, 32, 33, 37, 42-44, 49, 74-78, 111, 122, 125, 131, 137, 145, 258, 260, 269, 287, 296, 301, 302, 304, 305, 307, 312-320, 323-328, 333, 336, 381, 407, 409, 412, 414, 416, 418, 419, 432, 436, 437, 480, 489, 492, 495, 499, 500, 576, 580, 581, 585, 589-591, 595, 596, 606, 660, 661, 678, 680, 685, 690, 691, 695, 869, 875, 876, 880, 881, 892, 894, 896, 897, 899, 1022, 1059-1061, 1098-1100, 1108, 1109, 1118-1120 III, 1193_1195 IV, 208-219, 710, 738, 749, 765

C₃H₈O₂
Methylal, Propyleneglycol, 1,2-Propyleneglycol
I, 388, 395, 408-410, 668, 669, 678, 742,
744, 748, 823, 833, 924, 925, 994
II, 28, 28, 95, 138, 382, 413, 491, 496,
504, 601, 662, 664, 665, 670, 671, 876,
1026, 1133
IV, 248

Methoxyglycol, Methoxyethanol
II, 21, 24, 25, 27, 28, 40, 42, 48, 49, 113, 116-118, 120, 121, 123, 132, 306, 312, 313, 317, 318, 320, 325, 326, 328, 410, 418, 420, 435, 490, 492, 495, 576, 586, 588, 589, 590, 592, 604, 692, 894, 895,

IV, 242

Trimethylene-glycol, 1,3-Propyleneglycol II, 1133, 1134
IV, 248

899, 1103, 1129, 1136

Isopropyl alcohol

IV, 748

II, 1, 4,,5, 9, 10, 15, 18, 23, 25, 28-32, 37, 42-44, 79-84, 111, 137, 259, 260, 288, 297, 298, 307, 311-319, 321, 324-327, 333, 337, 393, 409, 410, 412, 414, 416, 418, 419, 437, 465, 466, 480, 481, 487, 489-491, 493-495, 576, 581, 585, 588, 591, 595, 596, 606, 650-656, 661, 674, 680, 690-694, 700, 871-874, 880-886, 894, 896, 899, 900, 1022, 1062, 1063, 1100, 1110, 1118, 1121, 1122

III, 1195, 1196

IV, 220-224, 710, 738

Methylethyl ether

```
Trimethylamine
 CaHaOa
                                                                  1, 1061, 1092
    Glycerol
                                                                  11, 813
       II, 46, 119, 133, 134, 138, 139, 141, 142,
                                                                  IV, 76, 733, 749, 761
           145, 336, 340, 382, 421, 422, 424-425,
           428-430, 435, 467, 484, 488, 503, 504,
                                                           CaBHa0a
           607, 608, 610, 611, 664, 665, 668, 669,
                                                              Methyl borate
           673, 691, 879, 886, 898, 910, 912, 913,
                                                                 1, 588, 595, 601, 780, 789, 791, 792, 793,
           1030, 1104, 1114, 1119, 1122, 1123,
                                                                    795, 1014, 1030, 1206
           1125, 1128, 1134, 1137, 1138
                                                                 II, 899
      III, 1202-1204
                                                                 III, 1162
      IV, 252-268, 811, 826
                                                           C_3B_3H_90_3
                                                              Methylboric anhydride,
                                                                 I, 1092
                                                                 IV, 736
C3H8S
   1-Propanethiol, Propyl percaptan, Propyl mer-
                                                           CaBrHs 0
   captan
                                                              Epibromohydrin
      II, 13, 14, 22, 32, 33, 41, 409, 410, 1106,
                                                                  1, 729, 740, 747, 846
   2-Propanethiol
      11, 14, 32
                                                          C3BrH502
                                                              Brompropionic acid (1)
                                                                 II, 250, 255, 376, 378, 1009, 1072, 1087,
C<sub>5</sub>H<sub>9</sub>B
   Trimethylbore
                                                                 IV, 420
      I, 530
C<sub>3</sub>H<sub>9</sub>N
   Propylamine
                                                           C3BrH202
      1, 533, 962
                                                              Bromhydrin
      II, 813
                                                                 1, 488, 494
      III, 1122
      IV, 70
                                                           C3Br2H60
  Isopropylamine
                                                              1,2-Dibrompropyl alcohol, Dibromhydrin as.
                                                                 II, 46, 1145
     I, 962, 1057
                                                              Dibrom-2,3-propanol
      II, 650
                                                                 II, 504
      IV, 70, 71
```

C3C1H7O2

Propylenchlorhydrin, Chlorpropaneglycol, Glycerol chlorhydrin

II, 134, 140, 141, 142, 144, 1129

C3ClH9Si

Trimethylchlorsilane, Chlortrimethylsilane,

1, 760, 778

IV, 762

C3ClH10N

Trimethylamine chlorhydrate

IV, 141

 $C_3C1_2H_5N0$

Dichloracetomethylamide

I, 1165

 $C_3C1_2H_60$

1,2-Dichlor-3-propanol

II, 46, 47, 48, 49, 129, 145, 331, 332, 334, 338, 411, 426, 429, 491, 591, 876, 1130

1,3-Dichlor-2-propanol

II, 28, 45, 47, 48, 49, 117, 118, 119, 132, 145, 311, 321, 330, 331, 332, 334, 337, 338, 411, 424, 426, 429, 491, 492, 494, 1027, 1129, 1130

C3CIH3O2

1-Chlorcrotonic acid

II, 1009, 1011

 C_3C1H_50

Epichlorhydrin

I, 395, 398, 400, 417, 420, 483, 730, 736, 738-740, 747, 750, 846

II, 436, 463

Chloracetone

1, 399, 400, 419, 420, 486, 875, 1012

II, 495

Propionyl chloride

I, 701

CaClHsOa

2-Chlorpropionic acid

II, 386

Ethyl chlorcarbonate

II, 606

Methyl chloracetate

I, 400, 420, 488, 494, 496, 730, 739, 747, 751, 831, 867, 868

II, 604

IV, 60

C3C1H2O2

Chloromethy lal

1, 395

C3ClH2O

1-Chlor-2-propanol

II, 21, 25, 115, 121, 125, 307, 318, 320, 325, 329, 576, 586, 899

2-Chlor-1-propanol

II, 43, 121, 125, 307, 318, 320, 325, 329, 410, 576, 592

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Lactonitrile, 2-Hydroxypropionitrile
                                                                    11, 382, 690
CaClaHO2
   Trichloracrylic acid
                                                           C3H5NS
      IV, 420
                                                               Ethylisothiocyanate
CaC15HaO2
                                                                  I, 1135
   Methyl trichloracetate
                                                               Ethylthiocyanate
      11, 605, 644
                                                                  1, 1135, 1091
CaClaHaOa
                                                           C3 H5 N3 O9
   Trichloracetic acid
                                                               Nitroglycerin
       11, 571
                                                                  1, 780, 992, 1009, 1019, 1026, 1033, 1122,
                                                                      1155, 1162, 1184, 1185, 1187, 1207,
C3C13H702
                                                                     1208-1211
   Chloral alcoholate
                                                                  11, 898, 957
       IV, 276
                                                           CaH6NAs
C<sub>3</sub>F<sub>5</sub>HO<sub>2</sub>
                                                               Dimethylcyansarsine
   Pentafluoropropionic acid
                                                                  I, 563
       11, 372
                                                            C3H6N202
CaHaNOa
                                                               Malonamide
   Cyanacetic acid
                                                                  IV, 123
       II, 980
       IV, 421
                                                           C3H6N6O6
                                                               Trimethylene trinitramine, Hexogen
C<sub>3</sub>H<sub>3</sub>NS
                                                                  1, 781, 1012, 1020, 1047, 1123, 1184, 1186,
   Thiazole
                                                                      1227, 1228, 1232, 1235, 1236, 1238,
       IV, 124
                                                                      1243, 1245
C3H5 IO2
                                                                  11, 898, 957
    2-Iodpropionic acid
                                                            CaH60S
       11, 571
                                                               Methyl thiocyanate
CaHaNO
                                                                  I, 845, 846
    Ethylene cyanhydrin
                                                                  II, 606
       II, 696
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CaHyNO
                                                           Lactamide 1
   N-Methylacetamide
                                                              II, 1071-1074, 1142, 1143
      I, 1089
                                                           Lactamide
                                                              IV, 278
   Acetoxime
                                                           2-Nitropropane
      II, 50, 1045
                                                              I, 630, 1090
      IV, 322
                                                           Propyl nitrite
   Propionamide
                                                              1, 586, 601, 791, 792, 946, 1006, 1030
      1, 607, 633, 635, 637, 638, 639, 640, 641,
                                                           Isopropyl nitrite
         648, 649, 655, 659, 797, 798, 799, 800,
                                                              1, 586, 587, 600, 601, 779, 789, 946, 993,
         994, 995, 996, 997, 998-1000, 1004-06,
                                                                 994, 1005
         1017, 1018, 1021, 1024, 1038, 1039,
         1041, 1043, 1044, 1046-1051, 1101, 1104,
                                                            1-Nitropropane
         1106, 1108, 1109, 1113, 1145, 1147
                                                               I, 790, 796, 1090
      II, 918, 982
                                                            Alanine d
   Dimethylformamide
                                                               II, 1073, 1238
      I, 1089, 1090, 1145
                                                               IV, 422, 423
      II, 870
                                                            Alanine 1
      IV, 825
                                                               II, 1073, 1238
                                                               IV, 422, 423
C3H7NO2
                                                            Alanine
   Urethan
                                                               IV, 422, 423
      1, 599, 607, 609, 610, 630, 633, 637, 638,
                                                        C3H7NO3
         641, 779, 782, 790, 791, 794, 796-800,
                                                           Serine dl
         940, 991, 994-998, 1003-1005, 1015,
                                                              IV, 425
         1017, 1018, 1021, 1031, 1038-1046, 1048,
                                                           Propyl nitrate
         1090, 1110, 1119, 1120, 1146, 1153,
                                                               1, 596, 598, 630, 790, 793, 794, 994, 1052,
         1161-1163
                                                                  1206, 1207
      11, 875, 876, 926, 927, 990
                                                               II, 894, 1004
      III, 1143
                                                               IV, 128
      IV, 121, 122
                                                        C_3H_8N_80
                                                            Dimethylurea sym.
   Lactamide d
                                                                I, 1155
      11, 1071-1074, 1142, 1143
                                                                II, 926
                                                            Dimethylurea asym.
                                                                 II, 926
```

CaH6NOS

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C3H9IS
   Trimethylsulfonium iodide
       IV, 150, 788
C3H9NO2
   Ammonium propionate
       IV, 133
CaHaNOa
   Ammonium lactate
       IV, 135, 279
C_3H_9O_4P
   Trimethyl phosphate
       11, 1008
       IV, 151
C<sub>3</sub>H<sub>10</sub>OSi
   Trimethy Isilenol
       II, 437
C3BrC1H5NO
   Chlorbromacetomethylamide
       I, 1165
CaClFaHu0
   1,1,2-Trifluoro-2-chloroethyl methyl ether
      I, 700
C_3C1H_5N_2O_6
   Dinitrochlorhydrin
       I, 1208
      II, 957
C_{3}C1_{5}H_{11}O_{2}N
    Trichlorlactamide
        II, 486, 408
       IV, 278
    Voluntal
       I, 1164, 1204, 1205
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Acetylthiourea
       II, 956
CaC1Hs INO
   Chloroiodoacetomethy lamide
       I. 1165
C<sub>4</sub>F<sub>8</sub>
   Perfluorcyclobutane
       I, 324
C_4F_{10}
   Decafluorobutane
       I, 180
C_{4}H_{6}
   1.3_Butadiene, Divinyl
       I, 98, 99, 532
C_{4}H_{8}
   I-Butene, \alpha -Butylene
       1, 51, 96, 97, 98, 206, 407, 530, 600
       IV, 690, 731, 771
   \beta-Butylene (.mixture )
       IV, 635, 648, 691
   2-Butene cis.
       I, 407
   2-Butene trans.
       IV, 771
   2-Butene as.
       IV, 771
   Isobutene
       I, 530-600
       IV, 731, 771
```

```
CyBr 2H3
CuH, D
   Butane
                                                           Isobutylenedibromide
                                                              I, 335
      1, 10-17, 27-31, 42, 48-52, 180, 361-364,
         386, 387, 516, 586
                                                        C4C1H7
      11, 3
                                                           Chlorbutenes
      III, 1031
                                                           1 - 1 cis., 1 - 1 trans., 2 - 1,
      IV, 632, 680, 731, 768
                                                           2 - 2 cis., 2 - 2 trans.
   Isobutane
                                                              II, 326
      I, 18, 48, 52, 387, 517, 586
      II, 3, 206
      IV, 633, 690, 731, 768
                                                         CuC1H9
                                                            Butylchloride n
C_{\mu}N_{2}
                                                               1, 187, 191, 196, 216, 335, 336, 737, 773,
   Acetylene-dicarbonic nitrile
                                                                  792, 821
      I, 1060
                                                               11, 314, 370
ChBrH7
                                                            Isobuty1chloride
   Brombutylenes
                                                               I, 187, 208, 261, 336, 737, 792, 821
   1 Br - 1 cis., 1 Br - 1 trans.,
                                                               II, 315, 370
   2 Br - 2 cis., 2 Br - 2 trans.,
                                                            Sec. Butylchloride
      II, 326
                                                               1, 201, 279, 335, 738, 792
                                                               11, 315
CuBrH9
                                                            Tert. Butylchloride
   Butyl bromide
                                                               1, 181, 197, 208, 317, 335, 336, 738, 792,
      I, 197, 198, 201, 218, 260, 326, 336, 738,
                                                                  810
         793, 821
                                                               II, 315, 370
      II, 315-316, 370, 371
      IV, 779
                                                         CuClaNa
   Isobutyl bromide
                                                            Dichlorofumaric nitrile
      1, 198, 304, 313, 326, 328, 334, 336, 738,
                                                               I, 1061
         773, 793, 821
                                                            Dichloromaleic nitrile
      II, 316, 317, 370
                                                                I, 1061
  Butyl bromide sec.
                                                         CuFg0
      I, 198, 313, 738, 793
     11, 317, 370
                                                            Perfluortetrahydrofurane
  Butyl bromide tert.
                                                                IV, 801
      I, 208, 739, 793
      11, 317, 370
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C_{14}B_{14}O_{3}
ChH2N2
                                                                 Succinic anhydride
   Fumaronitrile
                                                                    I, 878, 978, 1028
       I, 1059, 1060
                                                                    IV, 55
   Maleonitrile
       I, 1059, 1060
                                                             C_{\mu}H_{\mu}O_{\mu}
                                                                 Fumaric acid
C_h H_8 O_3
                                                                    II, 1217, 1226
   Maleic anhydride
                                                                    IV, 396
       1, 422, 424, 490, 491, 494, 497, 498, 500,
                                                                 Maleic acid
          501, 511, 878, 919, 978-979, 1028
                                                                     II, 816, 1055, 1060, 1066, 1217, 1226
C_{\mu}H_3O_{\mu}
                                                                     IV. 396
   Maleic acid
                                                              C_{\mu}H_{\mu}S
       II, 552
                                                                 Thi ophene
C_{\mu}H_{\mu}N_{R}
                                                                     1, 421, 447, 504, 756, 833, 838, 844, 960,
   Succinonitrile, Ethylene cyanide
                                                                        1052
       I, 771, 772, 940, 944, 948, 989, 1055,
                                                                     II, 437
          1058, 1059
                                                              C_4H_5N
      II, 694, 695, 867
                                                                 Pyrrole
      III, 1112
                                                                     1, 526, 571, 765, 769, 772, 773, 774, 953,
       IV, 68
                                                                        959, 960, 961, 969, 987, 988, 1061,
   Pyridazine
                                                                        1062, 1066, 1068, 1070, 1078, 1080,
       I, 954
                                                                        1081, 1135
      II, 801
                                                                     II, 678, 842, 843
   Pyrazine
                                                                     III, 1130
      I, 959
                                                                  Crotonitrile
C_{4}H_{4}O
                                                                     I, 1058
   Furane
                                                                     IV, 63
      I, 388, 448, 842
                                                                  Vinyl-acetonitrile
      II, 431
                                                                     1, 1058
C_{\mu}H_{\mu}O_{2}
                                                              CuH60
   Diketene
                                                                  Divinyl ether
      I, 844
                                                                     I, 444
      II, 559
                                                                  Croton aldehyde
                                                                      I, 851
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C_4H_6O_2
                                                        C_{\mu}H_{6}O_{\mu}
  Diacety1
                                                           Succinic acid
      11, 495, 559
                                                              II, 366, 367, 552, 828, 830, 839, 863, 985,
   Methyl acrylate
                                                                  993, 999, 1048, 1078, 1080-1082, 1090-
      II, 595
                                                                  1094, 1217
      IV, 56
                                                               IV, 394
   Methacrylic acid
                                                           Methylmalonic acid
      II, 638
                                                               IV, 393
   Crotonic acid
                                                           Methyl oxalate, Methyl diacetate oxalate
      11, 570, 1214, 1215
                                                               1, 401, 402, 424-426, 428, 487, 489, 490,
      IV, 749, 822
                                                                  492-494, 497, 498, 500, 509, 511, 513,
   \alpha-Crotonic acid
                                                                  705, 734, 737, 740, 741, 752, 753, 755,
      II, 1214
                                                                  832, 835, 836, 837, 838, 892, 892-900,
   β_Crotonic acid
                                                                  909, 988, 1045
      II, 1214
                                                               11, 597, 598, 617-620, 639
   Allyl formate
                                                               III, 1105
      1, 393, 466, 716, 723, 728, 737, 1031
                                                               IV, 59
      II, 576
                                                           Ethylene diformate
   3_Butyrolactone
                                                               I, 423, 424, 474, 487, 489-491, 493, 494,
      I, 977
                                                                  497, 498, 500, 501, 511, 512
C4H603
                                                        CuH605
   Methyl pyruvate
                                                           Malic acid rac.
      1, 420, 426, 428, 494, 642, 739, 740, 751,
                                                              II, 1227, 1228
         831, 847, 867
                                                           Malic acid 1
   Acetic anhydride
                                                              II, 1048, 1071, 1226-1228
      1, 406, 415, 416, 424, 491, 496-498, 501,
                                                           Malic acid d
         511, 843, 844, 851, 852, 878, 892, 933,
                                                              II, 1226-1228
         1027
                                                           Malic acid ?
      II, 574, 625
                                                              II, 552, 1055, 1060
      III, 1093
                                                              IV, 398-401
      IV, 54, 55, 787, 802, 808, 817
   Propylene carbonate
                                                       C4H6O6
      I, 988
                                                          Tartaric acid d
                                                              II, 363, 1048, 1056, 1071, 1227, 1229, 1230
                                                              IV, 401-409, 812
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Butyraldehyde Tartaric acid 1 1, 919, 961 II, 1227, 1229, 1230, 1231 II, 465 IV, 401, 402 IV. 23 Tartaric acid rac. Isobutyraldehyde II, 363, 1227, 1230, 1231 I, 926 IV. 402 II, 465 Mesotartaric acid IV, 1231 Tetrahydrofurane $C_{14}H_{7}N$ I, 708, 743, 744 Butyronitrile III, 1078 1, 534, 540, 545, 559, 773, 1054, 1057 IV, 10, 11, 745, 761, 763 II, 691 $C_{\mu}H_{\beta}O_{2}$ IV, 63 Butyric acid Isobutyronitrile II, 210, 211, 216-218, 228-230, 243, 245-I, 525, 534, 540, 773 251, 253, 257, 355, 357, 359, 361, 364, II, 691, 692 366-373, 375-379, 397, 452, 455-459, IV, 63 545, 626, 628, 639, 643-645, 823, 828, Pyrroline 832, 834, 837, 843, 844, 852, 860, 974, I, 953 976, 985, 1004, 1046, 1052, 1067, 1070, II, 678 1185, 1186, 1189 ChH 60 III, 1216 Vinyl ethyl ether IV, 381-386, 719, 744, 749, 814 II, 412 Isobutyric acid Methyl allyl ether II, 210, 211, 216-218, 230, 245-251, 355, IV. 8 359, 366-373, 375-378, 397, 452, 455, 457, 545, 560, 626, 639, 642-645, 813-2-Butanone, Methyl ethyl ketone 815, 823, 825, 827, 844, 852, 1004, 1, 389-403, 404, 405, 414, 419, 421, 456, 1009, 1066, 1070, 1186, 1189 485, 702, 713, 723, 737, 741, 743, 745, IV, 387-391, 719 749, 842, 846, 853, 855, 856, 861, 862, Methyl propionate 933, 965-967, 1013, 1014 1, 393, 398, 410, 416, 421, 473, 487, 702, II, 486-488, 555-557 720, 723, 737, 862, 896, 987, 1039 III, 1088 11, 588 IV, 48-52 IV, 56

Ethyl acetate

1, 393, 395, 397, 399, 403, 405, 406, 410, 416, 421, 422, 468-471, 487, 488, 502, 669, 696, 702, 716-720, 723-725, 734, 737, 739, 741, 742, 751, 754, 828, 833, 859, 861, 862, 864, 866-868, 870, 879, 880-889, 920, 934, 935, 980-984, 1031-1036

II, 578-585, 613, 614, 628-632

III, 1097-1100

IV, 56, 58, 651, 656, 662, 705, 716, 748, 788, 802, 806

Propyl formate

I, 393, 395, 397, 410, 416, 419, 421, 466, 702, 716, 723, 728, 736, 737, 739, 747, 749, 846, 879, 980, 1030

II, 576

III, 1095

IV, 56

Isopropyl formate

I, 393, 410, 696, 716, 723, 737, 933, 1030 II, 576

IV, 56

1,4-Dioxane, 3-Hydroxy-2-butanone

1, 390, 395, 396, 398, 400, 410-412, 417, 421, 448, 502, 679, 680, 708, 709, 730, 736, 738, 740, 746, 748, 759, 843, 844, 926, 958, 1002

II, 431-435, 460-463

IV. 11-17, 240, 763, 765, 780, 812, 816,825

1,3-Dioxane

IV, 801

CuHgO3

Glycol monoacetate, 2-Hydroxyethyl acetate
II, 119, 145, 331, 332, 338, 382, 411,
421, 429, 436, 591, 593, 599, 605,
608, 871, 1027, 1130, 1134, 1135

Methyl lactate

II, 24, 25, 28, 47-49, 113, 116-118, 120, 121, 123, 125, 130, 132, 306, 317, 318, 321, 325, 328, 330, 410, 419, 422, 492, 588-590, 592, 593, 601, 895, 1128, 1139

IV, 271

Dimethylglycolic acid

II, 993

C₁H₈S

Thiophane, Tetrahydrothiophene I, 400, 846, 847, 960, 1052 II, 437, 463

$C_{14}H_{9}I$

Butyl iodide

I, 198, 284, 326, 330, 739, 773, 793, 821

II, 317, 371

IV, 5

Isobutyliodide

I, 218, 336, 739, 773, 793

11, 318, 371

sec. Butyliodide

1, 739, 793

II, 318, 371

$C_4H_9N_2$

Pyrazine

IV, 91

$C_{\mu}H_{9}O_{2}$

Dimethyl acetal I, 926

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C .. H 1 00
```

Butyl alcohol, Butanol

II, 2, 10, 18, 19, 23, 25, 28, 29, 31, 32, 37, 38, 42-44, 49, 112, 116, 120, 122, 123, 125, 128, 138, 288, 289, 297, 302, 307, 312-326, 328, 381, 393, 411, 412, 414-420, 434, 435, 436, 481, 482, 490, 492-495, 502, 576, 586-594, 597, 604, 607, 650-656, 674, 678, 680, 691-694, 869, 871-874, 881-886, 894-897, 899, 901, 913, 1022, 1063-1065, 1100, 1110, 1118, 1121-1124

III, 1196, 1197

IV, 225-227, 710, 729, 749

Isobuty1 alcohol, Isobutanol, 2-Methy1propanol

11, 10, 19, 24, 25, 31, 32, 38, 42, 44, 49, 85, 86, 112, 116, 123, 125, 138, 260, 269, 289, 302, 305, 307, 308, 312-314, 316-321, 324-328, 333, 334, 336, 339, 341, 381, 393, 394, 407, 409, 411, 412, 416, 418, 419, 432, 434, 436, 471, 482, 489, 490, 492, 495, 502, 576, 581, 585, 588-592, 596, 604, 607, 661, 665, 675, 678, 680, 691, 695, 696, 881, 894-897, 899, 901, 902, 1022, 1066, 1101, 1111, 1118, 1121, 1122, 1124-1127

III, 1197

IV, 228-232, 711, 739

sec.Butyl alcohol, Methyl ethyl carbinol
II, 5, 10, 15, 19, 25, 32, 38, 42, 43, 87,
112, 138, 289, 294, 302, 313, 314, 316,
317, 319, 324, 325, 394, 409, 419, 434,
436, 487, 488, 490, 492, 574, 575, 576,
585, 588_591, 596, 662, 894, 896, 899,
900, 1111, 1122, 1127

IV, 232-234, 711, 739

Methyl ethyl carbinol d

II, 24

tert. Butyl alcohol, Trimethyl carbinol

II, 4, 10, 11, 15, 19, 20, 25, 32, 33, 38, 42-44, 87, 88, 126, 138, 289, 297, 302, 312-317, 319, 324, 326, 327, 338, 393, 409, 419, 434, 465, 487, 576, 581, 588, 591, 596, 597, 665, 670, 672, 676, 677, 680, 882, 894, 896, 899, 1022-1024, 1066, 1127

III, 1197

IV, 235, 236, 739

Ethyl ether

I, 387, 388, 395, 398, 402-408, 410, 421, 423, 427, 429, 443, 483, 499, 504, 505, 512, 513, 668-677, 702, 703, 705, 706, 721, 722, 723, 725, 728, 730, 731, 735, 741, 749, 750, 753, 759, 760, 823-830, 918-924, 948-952, 991-993

II, 399-408, 437-439, 451-455

III, 1075-1078

IV, 6, 7, 647, 651, **65**4, 660, 661, 704, 715, 716, 719, 748, 751, 753, 756, 757, 761, 762, 779, 804, 807, 812, 815, 816 Methylpropyl ether

II, 398

IV, 8

```
Ethylene glycol dimethyl ether
C4H1002
                                                               I, 678
  Ethoxyglycol, Ethoxyethanol
      II, 21, 24, 25, 28, 42, 43, 47, 48, 49,
                                                           Ethylcellosolve
                                                               IV, 54
          113, 116, 117, 118, 119, 120, 121, 123,
          124, 125, 126, 306, 313, 317, 318, 320,
                                                        C4H1003
          325, 328, 330, 410, 419, 422, 435, 495,
                                                           Diethylene glycol
          496, 586, 588-590, 592, 604, 605, 692,
                                                               11, 12, 21, 39, 45, 95, 113, 116, 117, 119,
          895, 1136
                                                                   120, 123, 128, 129, 130, 133, 134, 138,
      IV, 242, 243
                                                                   139, 141, 142, 143, 144, 145, 336, 340
   1,4-Butanediol
                                                                   382, 421, 426, 427-430, 468, 600, 607,
      II, 435
                                                                   608, 610, 611, 683, 684, 886, 887, 903,
   2,3_Butanediol meso
                                                                   908, 910, 912, 913, 1027, 1028, 1133,
                                                                   1137, 1144
      11, 1135
                                                               III, 1202
   2,3-Butanediol levo, 2,3-Butylene glycol (1)
                                                               IV, 248
      11, 595, 601, 1135
      IV, 250, 251
                                                       C4H10O4
   2,3-Butanediol (d)
                                                           Erythritol
      11, 1134, 1135
                                                               11, 672, 673, 875, 876, 1030, 1068, 1069,
   2,3_Butanediol (d1)
                                                                   1138
      II, 1135
                                                               III, 1204
   2,4-Butanediol
                                                               IV, 268
      II, 416
                                                       C4H, oS
   Butanediol ?
                                                           Butyl mercaptan, 1-Butanethiol
      II, 131
   Methyl glycolate
                                                              II, 21, 22, 26, 33, 42, 596, 897, 1119
      IV, 748
                                                           2-Butanethiol
   Methyl ethyl formal
                                                              II, 22, 33, 41
      1, 678, 994
                                                           2-Methyl-1-propanethiol, Isobutanethiol
      II, 413
                                                              II, 13, 14, 22, 26, 33, 41, 42, 419, 606
      IV, 9
                                                           Ethyl sulfide
   Dimethyl acetal
                                                              1, 395, 447, 702, 738, 831, 833, 845, 846
       I, 678,
                                                                 1005
       II, 414
                                                              11, 419, 456
       IV. 9
                                                              III, 1078
                                                              IV, 788
```

```
C<sub>4</sub>H<sub>11</sub>N
    Diethylamine
       1, 517, 524, 532, 546, 949, 962, 963, 973,
           1061, 1091, 1092
       11, 652, 814
       IV, 74, 75, 720
    Butylamine n
       1, 533, 535, 761, 966
       III, 1122
       IV, 71, 720
    Isobutylamine
       1, 519, 533, 962
       II, 813
       IV. 71
    sec.Butylamine
       IV, 71
    tert.Butylamine
       IV, 720
CuH12Si
    Tetramethyl silicon, Tetramethylsilane
       I, 300
       IV, 745
C_{4}H_{13}N_{5}
    Diethylenetriamine
       I, 762
ChBrHsOn
   Bromsuccinic acid rac.
      11, 1236
   Bromsuccinic acid d
      11, 1236, 1239
   Bromsuccinic acid 1
      11, 1237, 1239
```

```
C4BrH702
    Ethyl bromacetate
       1, 426, 428, 489, 498, 734, 740, 741, 752,
          755, 836
       II, 606, 645
C_{\mu}BrH_{B}N0
    1-Bromobutyric amide
       I, 1166
    3-Bromobutyric amide
       I, 1166
ChBrH, 10
  Diethyloxonium bromide
      II, 418
  Ethylether hydrobromide
      IV, 8
ChBrH12N
   Tetramethyl-ammonium bromide
       IV, 657
CuBraH100
   Ethyl ether tribromide
       I, 830
C4C1H502
   Chlorcrotonic acid iso
       II, 1235
   Chlorcrotonic acid n
       II, 571, 1235
```

IV, 824

```
ChClaHhOh
ChC1Hc0h
                                                          Dichlorsuccinic acid d
   Chlorsuccinic acid d
                                                              II, 1072, 1227, 1230, 1235, 1236-1238
      II, 1072, 1223, 1227, 1229, 1235-1237
                                                          Dichlorsuccinic acid 1
   Chlorsuccinic acid 1
                                                              II, 1228, 1230, 1235, 1236-1238
      II, 1223, 1227, 1229, 1230, 1231, 1235,
                                                       ChC12H602
          1236
                                                           Ethyl dichloracetate
   Chlorsuccinic acid rac.
                                                              II, 605, 644
      11, 1236, 1277,
      IV, 421
                                                              IV, 707
CuClHsOs
                                                        C4ClaH7NO
   Chlormalic acid I d
                                                           Dichloracetoethy lamide
      11, 1072, 1235, 1237, 1239
                                                              1, 1165, 1166
   Chlormalic acid I 1
      11, 1228, 1229, 1231, 1236, 1239
   Chlormalic acid I rac.
                                                        C4C12H7NO
      II, 1231
                                                            Chlorex, Dichlorether sym.
                                                               1, 396, 398-401, 403, 413, 417, 418, 425,
   Chlormalic acid II 1
                                                                  449, 450, 486, 489-494, 496, 498, 499,
      11, 1073, 1228, 1229, 1231, 1236, 1237, 1239
                                                                  678, 701, 703, 709, 722, 726, 730, 731,
  Chlormalic acid II rac.
                                                                  736, 738, 741, 746, 748, 750, 752, 753,
      11, 1231, 1239
                                                                  755, 832, 835, 1003
CuClH202
                                                               II, 416, 417
   Ethyl chloracetate
                                                            Dichlorether asym.
      I, 488, 492, 493, 494, 496, 705, 732, 739,
                                                               1, 388, 390, 492, 705, 831, 845
         740, 831, 846, 847, 864, 870, 892, 896,
         897, 898
                                                        C4Cl2H8S
      II, 605, 644
                                                           Bis-(2-chlorethyl) sulfide, Yperite
      IV, 60, 706
                                                              I, 839, 418
C4C1H90
                                                              IV, 673
   Monochloro ethyl ether
                                                        ChClaHc02
      1, 395, 417, 669, 738, 845
                                                           Trichlorbutyric acid
C_4C1H_{12}N
                                                              II, 571
   sec. Butylammonium chloride
                                                              IV, 420
      IV, 142
                                                           Ethyl-trichloroacetate
   Diethylamine chlorhydrate
                                                              I, 697, 735, 889
      IV, 141
                                                              II, 606, 644, 645
   Tetramethylammonium chloride
                                                              III, 1109
      IV, 142
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ChClaHeOs
   γ,γ,γ-Trichlor-β-oxybutyric acid (d)
      II, 1239
   γ,γ,γ-Trichlor-β-oxybutyric acid (1)
      II, 1239
CuC13H20
   1,1,2-Trichlorether
      1, 426, 753, 845, 1003
ChC13H702
   Chloral alcoholate
      11, 105, 1071
   Butyl chloral hydrate
      II, 889, 891
C4C15H3O4
   Trichlormethyldichloroformate
      I, 466
C_{\mu}H_{\mu}N_{2}O_{3}
   Barbituric acid, (see also barbituric derivat.)
      I, 1157, 1158
C_4H_5NO
   Allyl isocyanate
      II, 878
ChH NO
   Methyl cyanacetate
      I, 1009
      II, 878
   Succinamide
      I, 1027
      II, 929-931
      IV, 123
C_4H_5NS
   Allyl isothiocyanate
      I, 616, 798, 945, 991, 1005, 1091, 1100,
         1102, 1104-1106, 1108, 1110, 1111, 1118,
         1121, 1135, 1136, 1137, 1138, 1168
```

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II, 877, 878, 1004
       IV, 675, 676
   Allyl thiocyanate
       1, 1093, 1101, 1136, 1168
ChH5NS2
   2-Mercapto-4-Methyl thiazol
       I, 1155, 1156
      II, 945
C4H6N2O2
   Fumaramide
       1, 1151
   Malicamide
       I, 1151
C_{\mu}H_{6}N_{2}O_{\mu}
   Tartramide 1
       II, 1143
   Tartramide d
      II, 1143
ChH6NhO8
   Dinitro-dimethyloxamide
      I, 1213
C4H6N4012
   Nitroerythrite
      1, 1185, 1207, 1212, 1213
C4H7D0
   Isobutyric deuterio acid
      IV, 719
C4H2NO
   Crotonamide cis.
      I, 1151
   Crotonamide trans.
      1,1148, 1151
   Isocrotonamide
      I, 1148
```

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C_4H_7NO_4
                                                           C<sub>4</sub>H<sub>9</sub>NO
   Aspartic acid 1
                                                              Morpholine
      11, 1238
                                                                  1, 558, 613, 614, 1093
   Aspartic acid ?
                                                                  II, 780, 888, 1117
      IV, 425
                                                                  III, 1138, 1139
                                                                  IV, 278, 279
CuHaNaOa
                                                              Dimethylacetamide
   Succinamide
                                                                  I, 1089, 1090
      1, 1151
                                                               N_Ethylacetamide
   Propiony lurea
                                                                  I, 1089
      1, 1153, 1155
      II, 928
                                                               Butyramide
                                                                   I, 1146, 1148
                                                                   II, 982
C4H8N2S
                                                                Isobutyramide
   Allylthiourea
                                                                   II, 982
      I, 542, 1121, 1167
      II, 956
                                                           CuHoNO2
   Thiosinanine
                                                               Butyl nitrite
      I, 1023, 1204
                                                                  1, 588, 601, 603, 617, 785, 792, 1014, 1031,
                                                                      1033, 1039, 1087
C_{\nu}H_{8}OS
                                                               Isobutyl nitrite
   Ethyl thioacetate
                                                                  1, 588, 601, 791, 792, 795, 946, 993, 1030,
      II, 606, 607
                                                                      1206
C4H802S
                                                                  IV, 128
   Tetramethylene sulfone
                                                               Methylurethane
      I, 977
                                                                  II, 877
                                                               Aminobutyric acid
                                                                  IV, 424
C_{4}H_{8}N_{2}O_{3}
   Asparagine 1
                                                           C_{4}H_{9}NO_{3}
      II, 1073, 1238
                                                               Isobutyl nitrate
      IV, 736, 425
                                                                  1, 793, 794, 994, 1003, 1030, 1039
   Malic amide 1
                                                                  II, 895, 1004
      II, 1142
                                                                  IV, 128
      IV, 278
                                                            ChHoNOs
   Malic amide d
                                                               Ammonium acid malate
      II, 1143
                                                                   IV, 136
```

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C_{1}H_{10}N_{2}0
     Nitrosodiethylamine
         IV, 803
 C_{14}H_{10}O_{3}S
    Diethyl sulfite
        I, 701
    Bis ( 2-hydroxyethyl ) sulfoxyde
        II, 1143
 C_{\mu}H_{10}O_{\mu}S
    Diethyl sulfate
       1, 394, 400, 401, 402, 409, 420, 701
    Bis ( 2-hydroxyethyl ) sulfone
       11, 1143
 CuH11NO2
    Diethanolamine
       II, 45, 133, 134, 140, 143, 144, 426, 428,
       IV, 276
ChH12 IN
    Tetramethylammonium iodide
       IV, 662, 793
CuH12N2O5
    Ammonium malate 1
       IV, 135
C4H12N2O6
   Ammonium tartrate
       IV, 136
CuH120uSi
    Methyl orthosilicate
        I, 844
CaHaoIN
   Tetraethylammonium iodide
      IV. 144
```

```
C4BrC1H2NO
    Chlorobromoacetoethylamide
        1, 1165, 1166
CuBrH6NO
    1-Bromocrotonic amide inf.
       I, 1166
    1_Bromocrotonic amide sup.
       I, 1166
    3-Brmocrotonic amide inf. cis.
        I, 1166
    3_Bromocrotonic amide sup. trans.
        I, 1166
CuBrHa02S
   Dimethylthetine hydrobromide
      IV, 150
CuClFaH60
   1,1,2-Trifluoro-2-chloroethyl ether
      I, 700
CuC1H6NO
   2-Chloroethylene amide-a
      I, 1166
   2-Chloroethylene amide-\beta
      I, 1166
C_{14}C1H_{8}O_{14}N
   Ammonium acid chlorsuccinate
      IV, 137
C_{\mu}C1H_{8}O_{\mu}S_{2}
   Butan-disulfochloride 1,3 + 1,4
      I, 849
 ChClH11N2Oh
    Ammonium chlorsuccinate
       IV, 137
 C_{\mu}H_3N0_2S
    5-Thiazolcarboxylic acid
```

II, 1247, 1269, 1271

```
Amylene
CuClH2 ION
                                                              I, 207, 407, 408, 530, 531, 600
   Chloriodoacetoethylamide
                                                              II, 30
      1, 1166
                                                              IV, 652
C5F10
                                                             2-Pentene 3 -Amylene
   Perfluoro-cyclopentane
                                                                I, 407
      I, 337
                                                                11, 30
      111, 1063
                                                             2,3-Dimethy1-1-butene
                                                                 1,531
C_5F_{12}
                                                             2,3-Dimethyl-2-butene
   Perfluoro pentane
                                                                 I, 531
      I, 181, 337
                                                             Trimethylethylene
      111, 1062
                                                                 1, 54, 98, 207, 373, 408, 531, 600
      IV, 649, 761
                                                                 II, 30, 213
C_5H_8
                                                            Isopropylethylene
   Isoprene
                                                                 1, 55, 207, 531
      1, 54, 98, 208, 408, 600
                                                                 11, 30, 213
      II, 31
                                                            Cyclopentane
   Cyclopentene
                                                                1, 67, 101, 208, 373, 410, 533, 601
      I, 55, 101, 103
                                                                II, 32, 149, 213
      II, 33
                                                        C5H12
   1-Methylbutadiene
      I, 100
                                                               I, 19, 42, 48, 52-55, 181, 364, 387, 388,
   2-Methylbutadiene
                                                                  517, 586, 587
       1, 59, 373
                                                               II, 3-5, 146, 206
   Dimethylallene asym., 1,3-Pentadiene
                                                               111, 1031
      I, 208, 409
                                                               IV, 1, 726, 768
      11, 31
                                                            Isopentane
                                                               1, 43-44, 52, 55, 56, 181, 182, 370, 388-
C_5H_{10}
                                                                  389, 517, 518, 585, 587
   Pentene
                                                               II, 5, 146, 206
       1, 98, 207, 367, 373
                                                               III, 1031
    Isopentene
                                                               IV, 731, 747
       I, 98
                                                           Tetramethy Imethane
   2-Methyl-1-butene
                                                               I, 182
      1, 408
   3-Methyl-l-butene
      I, 408
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C5BrH11
                                                        C5H5N
    Amyl bromide
                                                           Pyridine
       II, 319
                                                               1, 525, 527, 528, 540, 542, 555-557, 562,
    Isoamylbromide
                                                                  563, 571, 579, 585, 760, 764, 768-771,
       I, 201, 218, 336, 740, 773, 794
                                                                 773, 774, 777, 956, 958-960, 965, 967,
       II, 320, 372
                                                                  971, 973, 974, 983, 986, 987, 990, 1056,
                                                                  1060, 1066, 1068, 1069, 1080-1083, 1137-
C5ClH9
                                                                  1139
   Cyclopentylchloride
                                                               II, 678-682, 777-790, 845-855
       I, 334, 335
                                                               III, 1130-1136
C5CIH11
                                                               IV, 91-98, 657, 662, 675, 733, 745, 746,
   Amyl chloride
                                                                   791
       I, 286
                                                        C5H6N2
   Isoamyl chloride
                                                           Glutaronitrile, Trimethylene cyanide
      I, 198, 218, 740, 773, 794
                                                               1, 559, 761, 771, 958, 961, 962, 968, 969,
      II, 319, 372
                                                                  977, 980, 981, 988, 1055, 1057, 1059,
C5C160
                                                                  1060, 1089, 1090
   Hexachloro-2-cyclopenten-1-one
                                                               II, 695, 696, 812, 867
      I, 876
                                                               IV, 68
   Hexachloro-3-cyclopenten-1-one
                                                            2-Aminopyridine
      I, 876
                                                               II, 856, 857
C_5H_4O_8
                                                        CEH40
   Furfural
                                                            Methyl-2-furane
      I, 386, 387, 402, 407, 412, 424, 425, 426,
                                                               I, 842
         428, 489, 490, 492, 493, 497, 498, 499,
                                                               II, 431
         500, 511, 731, 733, 737, 740, 752, 753,
                                                               IV, 11
         755, 830, 731, 832, 835, 836, 837, 842,
         847, 850, 854, 860
                                                        C5H602
                                                            Furfuryl alcohol
      11, 468, 469, 545, 546
                                                               II, 40, 42, 45, 117-120, 128-130, 133, 139,
      III, 1082
                                                                   143, 261, 314, 334, 382, 411, 424, 590,
      IV, 24-26
                                                                   601, 663, 895, 1044, 1136, 1143
C_5H_\mu O_3
   Furoic acid
      II, 1245, 1268, 1269
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C5H8O3
C5H6S
                                                            Levulinic acid
   2_Methylthiophene
                                                               11, 251, 254, 256, 458, 460, 646, 647,
      I, 483, 844
                                                                   1011, 1013, 1089
   3_Methylthiophene
                                                            Ethyl carbonate
      I, 483, 844
                                                               I, 402, 847
C_5H_7N
                                                            Methyl acetoacetate
   N_Methylpyrrole
                                                               1, 424, 425, 426, 428, 492, 498, 499, 753,
      II, 843
                                                                  832, 835, 836, 837, 847, 863, 964, 896,
   Methyl-1-Pyrrol
                                                                  897, 898, 899, 900
      I, 959
                                                               II, 602
   Methy1-2-Pyrrol
                                                           Ethyl pyruvate
      1,960
                                                               1, 426, 428, 490, 494, 499, 752, 755, 831,
      II, 678
                                                                  836, 868, 896, 898
                                                               II, 642
C_5H_80
   Isopropylidene acetone
                                                        C_5H_8O_4
       IV, 52
                                                           Methyl malonate
   Methy 1-3-butene-2-one-2
                                                               1, 402, 424, 425, 426, 428, 490, 498, 500,
       IV, 52
                                                                  513, 735, 753, 757, 832, 834, 835, 836,
   2-Methy1-3-butyne-2-01
                                                                  837, 847, 892, 898, 899, 1046
       IV, 238
                                                               II, 640
   Cyclopentanone
                                                           Glutaric acid
       1, 420, 739, 747, 845, 857, 862, 868, 969
                                                               II, 1000, 1218
       II, 496
                                                               IV, 395, 822
                                                           Methylsuccinic acid d
C_5H_8O_2
                                                               II, 1055, 1220
    Acetylacetone
                                                               IV, 395
       I, 853, 867
                                                            Methyl succinic acid d
       II, 495
                                                               II, 1220
       IV, 53
                                                               IV, 394
   Pentanedione_2,3
                                                           Methyl
      IV, 52
   Ethyl acrylate
                                                           Methylsuccinic acid d
      II, 596
                                                               II, 1220
   Methyl methacrylate
                                                               IV, 394
      II, 595, 596, 638
                                                           Methylsuccinic acid rac.
      IV, 60
                                                              II, 1220
                                                           Ethylmalonic acid
    Valerolactone
                                                               IV, 393
       IV, 18
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Methylisopropylketone
C_5H_9N
                                                              I, 397, 414, 669, 702, 738, 740, 846, 967,
   Valeronitrile
                                                                 1015
      1, 545, 565, 771, 953, 959, 987, 1054, 1058
                                                             II, 489, 558
      II, 692
                                                             IV, 52
   Isovaleronitrile
                                                           Diethyl ketone, 3-Pentanone
      1, 563, 773, 953
                                                               1, 397, 400, 419, 420, 702, 738, 740, 748,
      11, 692
                                                                 834, 851, 852, 862, 968, 1016
C5H100
                                                               II, 492, 559
   Cyclopentanol
                                                              IV, 52
      11, 43, 123, 317, 325, 328, 410, 415, 420,
                                                        C5H1002
          495, 588, 589, 597, 601, 604, 605, 895,
                                                           Valeric acid
          1107, 1117, 1139
                                                              II, 211, 216, 217, 218, 230, 246, 250, 253,
      IV. 279
                                                                  257, 355, 368, 369, 370, 372, 375, 376,
   Methyltetrahydrofurane. a
                                                                  377, 378, 379, 455, 457-460, 544, 637,
      IV, 801
                                                                  639, 640, 644, 649, 823, 827, 853, 860,
   Tetrahydropyran
                                                                  976, 985, 1009, 1077, 1189, 1190
      III, 1079
                                                              III, 1216
   Vinyl propyl ether
                                                              IV, 391, 744
      II, 412
                                                           Isovaleric acid
   Vinyl isopropyl ether
                                                              11, 211, 216, 217, 218, 230, 246, 247, 250,
      II, 412
                                                                  251, 257, 355, 359, 368, 369, 372, 375,
   Pentamethylene oxide
                                                                  376, 377, 378, 379, 397, 398, 455_459,
      I, 506
                                                                 544, 640, 643, 649, 813-815, 823, 825,
   Isovaleraldehyde
                                                                 827, 837, 844, 853, 1189, 1190
      I, 846, 850, 926
                                                             IV, 391
      IV, 23
                                                       C5H11I
  Methylpropyl ketone, 2. Pentanone
                                                           Isoamyliodide
      1, 397, 414, 419, 702, 736, 748, 851, 853,
                                                              I, 221, 285, 740, 794
         856, 861, 862, 1015
                                                              II, 320, 321, 372
      11, 488, 489, 558
                                                           Tert.Amyl iodide
      IV, 52
                                                              I, 741
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2-Pentanol, Methyl propyl carbinol,
C5H11N
                                                           2-Methyl butyl alcohol,
   Piperidine
                                                              11, 20, 24, 42, 43, 113, 116, 305, 317,
      I, 525, 539, 555, 562, 973, 974, 983, 1062,
                                                                  320, 325, 328, 435, 436, 495, 590,
         1063, 1066, 1068, 1080, 1082, 1083,
                                                                  592, 604, 894-986, 899, 1128, 1129
         1135-1137
                                                              IV, 238
      II, 775-777, 843-845
                                                           2-Methylbutanol 1 and d
      III, 1130
                                                              II, 416
      IV, 89, 90, 91, 720
                                                              IV. 711
   Cyclopentylamine
                                                           Methyl isopropyl carbinol
      I, 1061, 1062
                                                              II, 20, 23, 42, 113, 316, 436, 899
C_5H_{12}O
                                                              IV, 238
   Amyl alcohol
                                                           Diethyl carbinol, 3-Pentanol
      II, 2, 20, 42, 43, 88, 116, 123, 125, 128,
                                                              II, 20, 42, 91, 113, 316, 411, 576, 604,
          259, 270, 305, 317-321, 325, 328, 407,
                                                                  607, 680, 896, 899
          410, 411, 416-418, 420, 435, 436, 483,
                                                              IV, 238, 711
          581, 588, 591, 597, 601, 604, 692, 895,
                                                           tert.Amyl alcohol, Dimethyl carbinol
          897, 1067, 1102, 1111, 1121, 1128
                                                               II, 11, 20, 24, 25, 32, 38, 42, 43, 49,
      III, 1198
                                                                   113, 290, 307, 312, 313, 316, 319,
                                                                   324, 325, 326, 409, 432, 471, 489,
      IV, 237, 711, 717
                                                                  492, 576, 585, 589, 590, 691, 692,
    Isoamyl alcohol, Isobutyl carbinol
                                                                   894, 896, 897, 899
      II, 11, 20, 24, 25, 28, 42, 43, 48, 49, 89,
                                                               IV, 237, 238
          90, 91, 113, 116, 120, 123, 270, 290,
                                                            Ethyl propyl ether
          303, 305, 313, 317, 318, 320, 321, 325,
                                                               1, 409, 505, 677, 831, 993
          328, 330, 334, 381, 407, 410, 411, 413,
                                                               II, 409
          415, 419, 420, 435, 436, 483, 495, 496,
                                                               IV, 8
          576, 582, 586, 589, 591, 597, 604, 605,
                                                            Ethyl isopropyl ether
          666, 675, 678, 680, 682, 869, 894-899,
                                                               1,506
          902, 1067, 1102, 1112, 1113, 1119, 1121,
                                                            Methyl butyl ether
          1123, 1124, 1128, 1129
                                                               1, 737, 830, 993
      III, 1198, 1199
                                                               II. 398
      IV, 237, 661, 711
                                                            Methyl-tert.Butyl ether
    Amyl alcohol ( mixture )
                                                               II, 398
       IV, 238
                                                               IV, 2
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C5H, 204
C5H100
                                                           Pentaerythritol
   1,1_Methylethylene oxide
                                                              II, 898, 1138
      1, 506
   1,1-Dimethyltrimethylene oxide
                                                        C5H12S
      I, 506
                                                           Pentanethiol
   2,2-Dimethytrimethylene oxide
                                                               II, 106
      1,506
                                                        C5H,2S4
   Methyl propyl ketone
                                                           Tetrathiomethy lmethane
      I, 853
                                                              I, 511
C5H12O2
                                                        C_5H_{13}N
   Ethylal
                                                           Amylamine
       1, 395, 410, 702, 737, 746, 823, 833, 954,
                                                              II, 814
         994
                                                              IV, 72, 789
      II, 414
                                                           Methyl diethylamine
       IV. 9
                                                              IV, 76
   Acetal
       I, 444
                                                        C5BrH3S
       II, 414
                                                           5-Brom-2-thiophene carboxylic acid
   Propoxyglycol, Propoxyethanol
                                                               II, 1262
       II, 24, 28, 43, 46, 47, 48, 49, 116, 117,
                                                        C5BrH6N
          118, 120, 121, 123, 125, 132, 275, 317,
                                                           Pyridine hydrobomide
          325, 330, 337, 411, 415, 420, 422, 469,
                                                              IV, 657
          589, 591, 592, 601, 606, 895, 1026
       IV, 242, 243
                                                        C5BrH110
   Isopropoxyethanol
                                                           Ethyl-brompropyl ether
       IV, 243
                                                              IV, 656
   Ethoxyisopropanol
                                                        C5BrH12NO2
       IV, 244
                                                           Betaine hydrobromide
C_5H_{12}O_3
                                                              IV, 148
   Methoxydiglycol, Methylcarbitol
       11, 46, 47, 49, 119, 129, 132, 133, 139,
                                                        C5C1H9O2
           145, 411, 421, 429, 436, 495, 504, 591,
                                                           Propyl chloracetate
                                                              I, 426, 428, 489, 498, 734, 755, 896
          593, 596, 599, 605, 608, 664, 665, 671,
                                                              II, 605
           696, 898, 1028, 1029, 1134-1137
                                                              IV, 60
```

C5ClH12NO2 $C_5H_6O_4S_2$ Betaine hydrochloride 1,2-Dithiacyclopropane-3,5-dicarboxylic acid IV, 148 d and 1 II, 1269, 1270 C5ClH13Si Chlorethyltrimethyl silane CsH2NO3 II, 420 Pyrrolidon-5-carboxylic acid 1 IV, 437 C5Cl3H7O3 Methyl,3,3,3-trichlor-2-oxybutyrate 1 CsHgNuO, 2 II, 1142 Nitropentaerythrite, tetranitropentaerythrite Methyl,3,3,3-trichlor-2-oxybutyrate d 1, 630, 642, 781, 1009, 1019, 1026, 1045, 11, 1142 1093, 1122, 1184, 1185, 1187, 1212-1215 II, 898, 957 C5C16H2O Hexachloro-2-keto-3-pentene $C_5H_8O_hS$ I, 876 Methylsulfide succinic acid d and l and rac. II, 1221, 1240 $C_5 H_1 N_2 O_2$ Methylthiodiglycolic acid d and l and rac. Pyrazinecarboxylic acid II. 1225 II, 1246, 1272 C5H8O4S2 α,α, -Dimercaptoglutaric acid 1 C5H402S II, 1226 1-Thiophenecarboxylic acid CsHoON II, 1269 Pentenoic amide cis. 2-Thiophenecarboxylic acid 1, 1148, 1152 II, 1246, 1268, 1269 Pentenoic amide trans. 3-Thiophenecarboxylic acid I, 1148 II, 1246 Methylcrotonamide cis. C5H5NO2 I, 1148, 1151, 1152 Methylcrotonamide trans. 2-Pyrrolcarboxylic acid I, 1151 11, 1246, 1269 Methylisocrotonamide $C_5H_6N_2O_3$ I, 1148, 1152 n-Methylbarbituric acid I, 1157 C5H9NO2 Methyldiacetamide I, 1137

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C5H9NOn
   Glutamic acid dl
       IV, 425
C5H10N2O
                                                             II. 589
   Nitrosopiperidine
                                                             III, 1103
      IV, 127
  3-Hydroxy-3-methy 1-2-butanone
      IV, 242
                                                               II, 590
C5H1002
   Butyl formate
                                                               IV, 56
      1, 397, 419, 487, 738, 748, 863, 1030
      II, 576
      111, 1095
      IV, 56
                                                               II, 591
   Isobutyl formate
                                                               IV, 56
      1, 393, 397, 400, 416, 419, 488, 702, 737,
         738, 740, 748, 852, 879, 880, 1030
      II, 576
      III, 1096
                                                               IV, 281
      IV, 56
  Propyl acetate
                                                         C5H1003
     1, 389, 398, 400, 419, 471, 500, 702, 736,
        738, 740, 748, 834, 843, 852, 859, 862,
        879, 880, 889, 890, 984, 1036
     11, 585, 632
      111, 1101
      IV, 56, 706, 748
  Isopropyl acetate
     I, 393, 398, 400, 416, 419, 422, 702,
        737, 738, 831, 833, 834, 845, 852,
        984, 1036
                                                               IV, 59
     II, 585
      IV, 56, 706
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Ethyl propionate
  I, 389, 398, 400, 419, 473, 487, 500, 702,
     738, 748, 751, 851, 852, 879, 880, 884,
     889, 890, 987, 1039
  IV, 56, 707, 748
 Methyl butyrate
    1, 398, 400, 419, 473, 702, 738, 748, 751,
       834, 843, 851, 736, 852, 862, 987, 1040
    III, 1103
Methyl isobutyrate
    I, 398, 416, 419, 702, 737, 738, 831, 846,
       850, 852, 1041
Tetrahydro furfuryl alcohol
    II, 40, 42, 45, 125, 127, 130, 133, 143,
        382, 1133-1135
 Ethyl lactate
    11, 28, 46, 47, 48, 49, 117, 118, 120, 121,
        123, 125, 130, 132, 311, 314, 321, 330,
        337, 410, 418, 422, 496, 585, 589, 591-
        593, 895, 1026, 1129, 1139
 Methoxy glycol acetate, Methoxyethyl acetate
   1, 400, 402, 426, 428, 488, 492, 493, 494,
      732, 831, 834, 845, 863, 897, 891, 892,
      896, 897, 898, 1044
   11, 601, 615, 643
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C5H11NO3
    Ethyl carbonate
                                                           Isoamyl nitrate
       1, 420, 699, 739, 740, 741, 747, 831, 863,
                                                              1, 599, 607, 635, 782, 791, 1041, 1044,
          867, 988
       II, 597
                                                                 1162
                                                              II, 895, 1004
       III, 1104, 1105
                                                              IV, 128
       IV, 56, 59
   Propylene glycol acetate
                                                        C_5H_{11}NS
       I, 496, 739, 740, 741, 747
                                                           Methionine dl
                                                              IV, 131
C5H1004
  Monoacetin
                                                        C5H12INO2
      11, 99, 134, 139, 141, 144, 382, 608, 1115
                                                           Betaine hydroiodide
                                                              IV, 149
C_5H_{11}N0
  Diethylformamide
                                                        C5H12N2O
      I, 1145
                                                           Diethylurea
      IV, 110
                                                              I, 1155
   Valeramide
                                                        C5H13NO2
      I, 1146, 1148
                                                           Ammonium valerate
   1-Methyl-butyramide
                                                              IV, 133
      I, 1148
                                                        C_5H_{14}OSi
C5H11NO2
                                                           Ethoxytrimethylsilane
   Aminoisovaleric acid
                                                              I, 482
      IV, 424
                                                              II, 420
   Isoamyl nitrite
      1, 596, 605, 779, 791, 794, 795, 1015, 1016,
                                                        CsBrC1sH20
         1030, 1043, 1206
                                                           Pentachloromonobromo-2-keto-3-pentene
      IV, 128
                                                              I, 876
   Betaine
                                                        C5BrH3O2S
      II, 891
                                                           5-Bromo-2-thiophenecarboxylic acid
      IV, 425
                                                              II, 1249, 1269
                                                        C5C1F3H80
                                                            1,1,2-Trifluoro-2-chloroethyl propyl ether
                                                               I, 701
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C5C1H10NO4
                                                           C<sub>6</sub>H<sub>8</sub>
   Glutamic acid hydrochloride
                                                               1,3-Cyclohexadiene
       IV, 150
                                                                  I, 113, 120, 421, 606
                                                                  II, 44, 216
C5H13NO6S
                                                                  IV, 1
   Betaine sulfate
                                                               1,4-Cyclohexadiene
       IV, 149
                                                                  II, 44, 216
C5H1406P
                                                                  IV, 1
   Betaine phosphate
                                                           C6H10
      IV, 149
                                                              1,5-Hexadiene
C<sub>6</sub>Cl<sub>6</sub>
                                                                  I, 601
   Hexachlorobenzene
                                                              2.4-Hexadiene
      1, 349, 776
                                                                 I, 601
      11, 350
                                                              Diallyl
                                                                 I, 68, 208, 409, 532, 601
C<sub>6</sub>F<sub>1</sub>µ
                                                                 II, 31, 213
   Perfluoro-n-hexane
                                                              1,2, 1,3, 1,4, and 2,4-Dimethylbutadiene
      I, 337, 741, 773
                                                                 I, 100
      II, 372
                                                              2,3-Dimethy1-1,3-butadiene
C6H6
                                                                 I, 59
   Benzene
                                                              2-Methyl-2,4-pentadiene
       1, 26, 46, 47, 52, 54, 55, 62, 65, 72, 73,
                                                                 I, 601
          74, 77, 78, 80, 82, 84, 87-90, 93, 98,
                                                              Methylcyclopentane
          100-103, 105-111, 114, 110-121, 123,
                                                                 I, 60
          125, 126, 127, 128-151, 223-272, 368-
                                                                 II, 33
          369, 375-381, 429-482, 544-559, 608-630
                                                              Cyclohexene
       II, 50-106, 151-165, 219-241
                                                                 I, 105, 113, 117, 118, 119, 120, 219, 421
       III. 1037-1042
                                                                 II, 43, 216
       IV, 1, 3, 649, 658, 667, 682, 685, 714,
                                                                 III, 1035
           731, 751, 752, 759, 761, 773, 774, 804_
                                                                 IV, 1, 773
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C6H12
                                                             2-Methylpentane
   4-Methyl-2-pentene
                                                                I, 191, 371, 395
      I, .409
                                                                II, 14
   Hexene ?
                                                                III, 1031
      I, 531
                                                                IV, 769
      II, 30
                                                             3_Methylpentane
   2-Hexene
                                                                1, 191, 371, 523, 524
      I, 601
                                                                II, 14
   2,3-Dimethyl butene
                                                                III, 1032
      I, 601
                                                             2,3-Dimethylbutane
   Cyclohexane
                                                                I, 56, 66, 68, 191, 371, 395, 524, 595
      1, 25, 26, 39-41, 52, 60, 61, 71, 78, 80,
                                                                II, 14, 15, 209
         86, 89, 90, 93, 101, 104, 105-113, 209-
                                                                III, 1032
         217, 373, 374, 410-417, 534-540, 601-
                                                             2,2-Dimethylbutane
      II, 34-41, 149, 213-215
                                                                1, 66, 67, 191, 371, 524, 595
      III, 1035, 1036
                                                                II, 14
      IV, 1, 731, 772, 805, 806
                                                            Trimethy lethy lmethane
   Methylcyclopentane
                                                                I, 524, 595
      1, 60, 101, 102, 103, 208, 410, 533, 601
                                                                II, 15
      11, 32, 33, 213
                                                            Methyl-diethylmethane
      IV, 772
                                                                I, 524, 595
  Ethylcyclobutane
                                                                II, 15
      I, 533
                                                        C6I6
C 6 H 1 4
                                                           Hexaiodobenzene
   Hexane
                                                               IV, 673
      1, 20, 55, 56-66, 182-190, 370, 371, 390-
         394, 518-523, 588-595
                                                        C6Cl2H4
      11, 6-13, 146, 147, 207-209
                                                            o-Dichlorbenzene
      III, 1031
                                                                I, 189, 222, 270, 289, 300, 753, 775, 797
      IV, 1, 2, 769
                                                                II, 332, 348, 376
   Isohexane
                                                                111, 1065
      I, 56, 523, 595
                                                            m-Dichlorbenzene
      II, 147
                                                                1, 190, 271, 340, 343, 346, 797
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p-Dichlorbenzene I, 179, 200, 221, 222, 271, 289, 292, 296, 305, 333, 343-347, 753, 775, 797, 808-809 II, 332-335, 349, 376 III, 1065, 1066 IV, 673 Bromobenzene I, 203, 204, 217, 221, 222, 268-270, 281, 282, 312, 323, 335, 340, 341, 342, 343, 752, 774, 796, 797, 808, 822 II, 330, 331, 348, 375-376 III, 1064 C6BrH13 Hexyl bromide I, 741, 794 II, 321, 372 C4Br2Hh p-Dibrombenzene I, 271, 272, 282, 296, 324, 343_345, 348, 753, 754, 775, 798, 799, 822 11, 335, 336, 350, 377 III, 1066 IV, 659, 686 Chlorbenzene 1, 188, 189, 200, 216, 217, 262-267, 279-

281, 286, 287, 296, 299, 311, 320-322,

808, 810, 822

IV, 3, 5, 673, 685

111, 1064

II, 328-330, 347, 348, 373-375

330, 331, 340-343, 750-752, 773-774, 796,

C6BrH5

C6C1H5

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C<sub>6</sub>ClH<sub>11</sub>
   Cyclohexylchloride
       I, 334, 336
C6C1H2
   1,3,5-Trichlorobenzene
       I, 180, 349, 755, 776
       11, 336, 377
   1,2,4-Trichlorobenzene
       I, 190, 349
   1,2,3_Trichlorobenzene
       I, 349
C6CluH2
   2,3,5,6-Tetrachlorbenzene
       I, 328, 346
   1,2,3,4-Tetrachlorbenzene
       I, 349
C6Cl5H
   Pentachlorbenzene
       I, 349
C6C16H6
   Hexachlorocyclohexane, Benzenehexachloride
       I, 289, 295, 339
C<sub>6</sub>FH<sub>5</sub>
   Fluorobenzene
       1, 261, 320, 340, 749, 796
       II, 327, 373
      III, 1063
C6F120
   Perfluorocyclohexyl ether
       I, 741
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C6H4I2

p-Diiodobenzene

1, 346, 348, 349

IV, 673

C6H402

Quinone, p-Benzpquinone

1, 504, 507, 512, 514, 515, 976, 1024

II, 506, 537, 568

IV, 687

C6H5I

Iodobenzene

1, 270, 340, 342, 343, 753, 775, 797

II, 331, 332, 348

III, 1065

C6H6N3

Benztriazol

I, 1084

C6H60

Pheno1

II, 146, 147, 148, 149, 150, 151-155, 166, 171, 172, 173, 174, 175, 178, 181, 182, 183, 201, 342, 343, 344, 346, 347, 348, 349, 350, 351, 382, 394, 437, 440-442, 447, 449, 506, 507, 509, 510, 517-519, 526, 528, 529, 531, 532, 535, 538, 539, 542, 614-617, 620-622, 701-705, 715-719, 723, 724, 727, 728, 735, 736, 741, 745, 751, 753, 754, 758, 761, 762, 767, 775, 777-779, 790-794, 801, 804, 806, 812, 914, 919, 926, 929, 931, 934, 937, 939, 944, 946-949, 957, 965-968, 1077-1080, 1014, 1016, 1017, 1022, 1025-1031, 1034 1036-1038, 1040, 1042, 1044, 1152-1159

IV, 323-335, 740, 743, 758, 814, 819

C6H602

Resorcinol

11, 147-149, 155, 169, 171, 172, 174-176, 179, 181, 182, 186, 193, 195, 196, 198, 201, 342, 343, 345, 348, 352, 353, 382, 438, 443, 447, 448, 450, 508, 513, 520, 521, 526, 529, 532, 533, 535-538, 540, 542, 543, 613, 616, 618, 620, 621, 624, 710, 730, 737, 741, 746, 755, 764, 768, 779, 802, 805, 809, 915, 920, 921, 927-929, 932, 935, 937-939, 941, 944-950, 956, 958, 971, 1014, 1017, 1018, 1022, 1023, 1030, 1032, 1035, 1038, 1041, 1043, 1080, 1152, 1159-1163

IV, 337, 338, 712, 717, 740, 758, 829

Hydroquinone

11, 149, 155, 173, 176, 178, 181, 185, 195, 199, 346, 438, 443, 514, 521, 527, 529, 533, 536, 537, 542, 543, 618, 620, 710, 730, 737, 741, 746, 755, 763, 768, 779, 803, 805, 809, 916, 921, 929, 932, 935, 941, 944, 946-948, 950, 955, 960, 971, 1018, 1023, 1032, 1035, 1041, 1042, 1081, 1082, 1152, 1159, 1161, 1163, 1164

IV, 339, 741, 795

Pyrocatechol

II, 148, 149, 155, 173, 174, 175, 176, 178, 185, 193, 195, 198, 201, 343, 345, 345, 350, 352, 353, 438, 443, 447-450, 508, 512, 520, 526, 528, 529, 531, 532, 535, 536, 540, 543, 618, 702, 710, 730, 737, 742, 745, 755, 764, 767, 780, 796, 801, 802, 805, 809, 915, 920, 929, 931, 936, 937, 940, 942, 944-949, 955, 961, 965, 970, 971, 1017, 1023, 1028, 1032, 1034,

```
1035, 1040, 1042, 1081, 1152, 1159,
                                                           1-Picoline
            1160
                                                              I, 562, 774, 960
        IV, 339, 741
                                                              II, 682, 855
                                                              III, 1136-1138
C6H6O3
                                                              IV, 99, 718, 792
  Methyl furoate
                                                           2-Picoline
      I, 510
                                                              1, 960, 1081, 1082
   1,1'-Dimethylsuccinic anhydride
                                                              II, 790, 855
      I, 843
                                                              IV, 99, 100, 718, 792
C6H6O5
                                                           3_Picoline
   Acetylmalic anhydride
                                                              II, 790, 791, 855
      I, 859
                                                              IV, 100, 792
                                                           4-Picoline
C6H608
                                                              11, 791, 792
  Diformyltartaric acid d
      11, 1231
                                                       C6H8N2
  Diformyltartaric acid 1
                                                          o-Phenylenediamine
      11, 1231
                                                             I, 554, 567-570, 577, 580, 581, 583, 584,
                                                                957, 1064, 1072, 1114, 1115
CAHAS
                                                             II, 672, 736-741, 828, 829
   Thi ophenol
                                                             IV, 88, 791
      11, 349, 350
                                                          m-Phenylenediamine
C6H2N
                                                             1, 554, 570, 577, 581, 583, 1115-1117
   Methyl-2-pyridune
                                                             II, 672, 673, 741-745, 829, 830
      I, 959
                                                             IV, 88, 826
      IV, 91
                                                          p-Phenylenediamine
   Aniline
                                                             1, 555, 564, 566-569, 571, 577, 580, 581,
      1, 516, 517, 521-533, 536-539, 541-544,
                                                                583, 1072, 1117, 1118
         549-552, 563-570, 576, 580, 584, 763,
                                                             II, 673, 745-750, 830, 831
         765, 769, 772-777, 938, 944, 945, 951,
                                                             IV, 88, 791, 826
         953, 954, 955, 956, 958, 960, 964, 971,
                                                          Pheny lhydrazine
         980, 982, 983, 986, 988, 1058, 1063-
                                                             1, 539, 541-543, 555, 561, 567, 568, 580,
         1067, 1093-1100, 1062
                                                                1078
      11, 657-663, 702-714, 817-824
                                                             II, 687, 806-808, 862, 863
      III, 1124-1127
                                                             IV, 88, 730
      IV, 85-87, 674, 707, 708, 718, 733, 754
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Adiponitrile
                                                        C<sub>6</sub>H<sub>9</sub>N
       I, 1059
                                                            2,5-Dimethylpyrrole
       IV, 67
                                                               I, 940
    2-Amino-3-methylpyridine
                                                            2,4-Dimethylpyrrole
       11, 857
                                                               I, 1070, 1082
                                                               II, 843
    2-Amino-4-methylpyridine
                                                            Cyclopentane
       II, 857
                                                               1, 1055, 1057, 1058
    2-Amino-5-methylpyridine
                                                            Ethylpyrrole
       II, 857
                                                               II, 678
    2-Amino-6-methylpyridine
       II, 857
                                                        C6H1002
                                                            Acetony lacetone
C_6H_8O_2
                                                               I, 969
  Dimethylpyrone
      IV, 817
                                                         C6H1003
C6H8O3
                                                            Ethyl acetoacetate ( ketone )
   1,1'-Dimethylsuccinic anhydride
                                                               II, 603
      I, 843
                                                            Ethyl acetoacetate ( enol )
                                                               II, 603
C_6H_8O_4
                                                            Ethyl acetoacetate, Acetoacetic ether
   Methyl fumarate
                                                               1, 402, 424, 425, 426, 428, 478, 489, 490,
      1, 425, 426, 504, 753, 756, 757, 832, 834,
                                                                  498, 500, 513, 699, 753, 755, 756, 757,
         835, 837, 899, 901, 910, 912, 1046
                                                                  829, 832, 834, 835, 836, 837, 868, 898,
      11, 599, 621, 642
                                                                  899, 901, 990
   Methyl maleate
                                                               II, 643
      1, 501, 509, 757, 834, 837, 838, 847, 871,
                                                               IV, 764
         899, 910, 912, 1046
      II, 599, 621, 642
                                                             Isopropylidene acetone
   Methoxybutyl acetate
                                                                I, 419
      I, 835
                                                             Methoxyglycol monoacetate
C6H802
                                                                I, 490
   Citric acid
      IV, 410-413
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C6H1004
    Ethylene diacetate, Glycol diacetate,
    Ethylene diacetine
       1, 416, 419, 422, 424, 425, 490, 491, 497,
          498, 501, 511, 753, 755, 757, 832, 834,
          837, 898, 899
       II, 596, 615, 637
       IV, 59
    Ethylidene diacetate, ethylidene diacetine
       1, 426, 428, 498, 670, 752, 755, 832, 835,
          836, 837, 892, 896, 897, 899, 900
       11, 596, 615
    a-Methylglutaric acid d
       11, 1055, 1224
       IV, 395
    Ethyl oxalate
       1, 424, 425, 426, 428, 477, 490, 497, 498,
          500, 513, 670, 735, 753, 755, 756, 757,
          832, 834, 835, 837, 885, 898, 899, 900,
          901, 906, 909, 936, 988, 1045
       II, 598, 620, 640
       III, 1106
    Methyl succinate
       1, 425, 426, 735, 749, 753, 754, 755, 756,
          757, 832, 834, 899, 910, 989, 1046
       II, 598, 621, 641
       111, 1107
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Ethylsuccinic acid d II, 1055, 1220, 1221

IV, 395

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Ethylsuccinic acid 1
        II, 1221
     Ethylsuccinic acid rac.
        II, 1221
    \alpha-\alpha'-Dimethylsuccinic acid l
       II, 1055
       IV, 395
    α-Methylglutaric acid 1
       II, 1224
    Methylglutaric acid d
       II, 1224, 1225
    Methylglutaric acid rac.
       II, 1225
    Propylmalonic acid
       IV, 393
    Adipic acid
       II, 246, 252, 257, 1000, 1003, 1218
       IV, 396
C6H1005
   Dilactic acid d
      II, 1225, 1231
   Dilactic acid 1
      II, 1225, 1231
   Saccharinic acid lactone
      IV, 126
   Dextrine
      IV, 322
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Methyl malate 1
       II, 96, 114, 124, 126, 259, 271, 275, 292,
           295, 297, 298, 303, 306, 308, 311,
           323, 324, 327, 329, 330, 331, 335,
           336, 337, 339, 340, 408, 415, 422,
           424, 463, 465, 467, 468, 472, 473,
           484, 504, 574, 575, 583, 589, 603,
           605, 606, 610-612, 662, 664-669, 681,
           683, 687, 690, 697, 869, 878, 894, 897,
           903, 907, 908, 1031, 1070, 1105, 1115,
           1120, 1125, 1134, 1137, 1139
       IV, 271, 752, 754, 804, 819
C6H1006
   Dimethyl tartrate d
      11, 96, 97, 303, 422, 484, 485, 606, 631,
          683, 869, 1105, 1139, 1140
      IV, 271, 272
   Dimethyl tartrate 1
      II, 1140
C6H1008
   Ethyl acetoacetate
      I, 832
   Ethylidendiacetate
      I, 896
   Citric acid hydrate
      11, 1056
C6H10S
   Allyl sulfide
      1, 488, 494, 703, 731, 831, 834, 846, 847
         960
      II, 420, 456
C<sub>6</sub>H<sub>1</sub>N
   Capronitrile
      1, 543, 563, 1058, 1088
      II, 692
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C6H11NO
  Diethyl ethanolamine
      II, 125
   Caprolactam
      11, 1003
C6H12N4
   Hexamethylene tetramine
      IV, 104
C6H120
   Cyclohexanol
      11, 28, 40, 45, 46, 47, 48, 100, 115, 117,
           118, 120, 121, 123, 129, 139, 132, 273,
           293, 311, 314, 321, 329, 330, 334, 337,
           339, 382, 411, 418, 422, 424, 426, 429,
          436, 469, 472, 486, 496, 584, 589-592,
          597, 605, 606, 663, 692, 895, 904,
           1036, 1037, 1107, 1129, 1138, 1139
      IV, 280
   2,5-Dimethyltetrahydrofurane
       IV, 801
    Isopropyl ether
       II, 410
    Ethyl butenyl ether?
       II, 413
    Ethyl butenyl ether cis.
       II, 413
    Ethyl butenyl ether trans.
       II, 413
    Vinyl butyl ether
       II, 412
       IV, 8
    Vinyl isobutyl ether
       II, 412
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Ethyl propyl ketone
       1, 419, 420, 740, 747, 847, 863, 1016
    Ethyl isopropyl ketone
       I, 420
    Methyl butyl ketone, 2-Hexanone
      I, 862, 863
      II, 490
      IV, 52
   Methyl isobutyl ketone, Methyl-4-pentanone-2
      I, 397, 399, 419, 420, 485, 693, 740, 747,
         846, 847, 856, 863, 967, 1015
      II, 490, 558
      IV, 52
   Ethyl propyl ketone
      I, 419, 420, 740, 747, 847, 863, 1016
      II, 492
   Ethyl isopropyl ketone
      I, 420
   Pinacolin
      1, 397, 419, 420, 485, 738, 863, 968, 1015
C6H1202
   Diacetone alcohol
      IV, 241
   4-Hydroxy-4-methy1-2-pentanone
      IV, 242
   Amyl formate
      I, 466, 880
     II, 627
     IV, 56
    Isoamyl formate
      1, 399, 729, 739, 740, 747, 831, 844, 846,
          863, 1030
      II, 576
      III, 1096
      IV, 56
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Butyl acetate
    1, 400, 403-406, 420, 737, 739, 742, 747,
       844, 862, 863, 866, 867, 890, 984-986,
       1036-1038
    II, 585_587, 633_635
    III, 1101
    IV, 56, 706
 Isobutyl acetate
    1, 398, 400, 420, 422, 739, 740, 747, 833,
       846, 847, 863, 875, 891, 986, 1038
    II, 588
    III, 1102
    IV, 56, 706
 sec.Butyl acetate
     II, 588
     IV, 56, 706
Propyl propionate
   1, 400, 740, 747, 846, 863, 1039
   II, 589
   IV, 56
Isopropyl propionate
   II, 592
   IV, 56
Ethyl butyrate
   1, 393, 400, 420, 473, 739, 740, 747, 831,
      846, 847, 875, 891, 896, 897, 1040
  III, 1103, 1104
   IV, 56, 707
Methyl isovalerate
   1, 400, 420, 739, 846, 863, 987
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Ethyl isobutyrate Paraldehyde 1, 393, 395, 398, 400, 419, 420, 487, 846, 1, 449, 679, 729, 740, 747, 825, 844, 850, 891, 897, 1041 926, 959, 1003 II, 591 II, 415, 435 IV, 56 IV, 17 Caproic acid Dimethoxy_3_butanone II, 216, 230, 231, 251, 253, 361, 376, IV, 53 377, 378, 379, 456, 544, 562, 565, C6H12O6 641, 642, 645, 844, 845, 853, 860, Inverted sugar 976, 1005, 1009, 1085-1087, 1190, 1191 IV, 317 IV, 814 Galactose Isocaproic acid IV, 290, 291, 811 11, 216, 250, 253, 376, 377, 378, 379, Levulose 458, 565, 641, 642, 645, 837, 1086, 11, 682 1087 IV, 287-290, 740 1,2-Cyclohexanediol cis. and trans, Glucose II, 590, 636, 1144 11, 1105, 1141, 1142 1,4-Cyclohexanediol cis and trans IV, 282-287, 811 11, 1144 C6H13N C6H1203 Cyclohexylamine Propyl lactate I, 548, 763, 1062, 1063 11, 46, 47, 48, 49, 129, 130, 132, 336, III, 1123, 1124 337, 338, 339, 411, 420, 424, 426, Pipecoline d and 1 429, 436, 491, 592, 593, 1027, 1030, I, 1083 1130, 1136, 1139 1-Methylpiperidine Isopropyl lactate IV, 90 11, 48, 49, 132, 311, 330, 337, 1030, 1139 2-Methylpiperidine Ethoxyglycol acetate IV. 90 1, 426, 428, 489, 490, 732, 740, 741, 752, 3-Methylpiperidine 755, 831, 832, 896, 897, 898 IV, 91 II, 616, 643 4-Methylpiperidine IV, 59 IV, 91 Hexamethylene_imine IV, 104

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C_6 H_{14} O_2
C6H140
                                                          Pinacol, Butoxyglycol
  Methyl amyl ether
                                                              II, 46, 47, 48, 49, 117, 119, 129, 130,
      IV, 748
                                                                  131, 132, 261, 311, 314, 321, 330, 331,
  Methyl tert. Amyl ether
                                                                  332, 334, 337, 338, 382, 411, 415, 418,
      II, 398
                                                                  420, 422, 424, 426, 429, 436, 467, 469,
      IV, 8
                                                                  588, 590-592, 596, 597, 657, 662, 671,
   Ethyl butyl ether
                                                                  871, 876, 1026, 1027, 1068, 1136
      1,831
                                                           1-Propoxypropane-2-ol
   Ethyl isobutyl ether
                                                              IV, 244
      II, 409
                                                           2-Propoxypropane-a-o1
   Ethyl tert. butyl ether
                                                              IV, 244
      II, 409
                                                           n-Butoxyethanol
      IV, 8
                                                              11, 118, 119, 129, 131
   Propyl ether
                                                              IV, 242, 244
      I, 702, 831, 953, 993
                                                           Isobutoxyethanol
      II, 409
                                                              IV, 244
      IV, 8, 655, 800
                                                           Glycol-diethyl ether
   Isopropylether
                                                              IV, 800
      1, 390, 410, 443, 677, 703, 707, 737, 953
                                                           Diethylglycol rac. and meso
      IV, 748, 800
                                                              II, 1135
   2-Methylpentanol
                                                           Butyl glycol
      11, 92, 416
                                                              11, 601, 1135
   Methyldiethylcarbinol
                                                           2-Methyl_2,4-pentanediol
      II, 416
                                                              IV, 251
   Ethyl-2-butanel
                                                           Ethyl acetal
      IV, 238
                                                               1, 395, 400, 417, 730, 736, 748, 834
   Hexyl alcohol, Hexanol
                                                               111, 1078
      11, 11, 28, 46, 47, 48, 49, 92, 117, 118,
                                                               IV, 9, 10
           120, 121, 130, 131, 290, 311, 314, 321,
                                                           Ethyl propyl formal
           330, 334, 337, 411, 415-418, 422, 424,
                                                               1, 994
          429, 469, 496, 592, 596, 601, 605, 606,
                                                               IV, 9
          692, 878, 895, 1129
      IV, 238
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C6H14S
C_6 H_{14} O_3
                                                           Propyl sulfide
   Carbitol
                                                              1, 494, 496, 703, 731, 831, 845, 846, 959,
      II, 1029
                                                                 1005
   1,2,6-Hexanetriol
                                                              II, 419, 456
      IV, 268
                                                           Isopropyl sulfide
   Ethoxydiglycol
                                                              1, 831, 846, 847, 959, 1005
      11, 46, 139, 411, 421, 428, 436, 665, 667,
                                                              11, 419, 456
          670, 1028, 1133, 1137
   Dipropylene glycol
                                                        C6H15N
      11, 382, 421, 426, 428, 430, 683, 908, 910,
                                                           Dipropylamine
          912, 913, 1028, 1133
                                                              1, 527, 560, 967, 968, 1062
                                                              IV, 75
C6H1404
                                                           Isohexylamine
   Triglycol ?
                                                              I, 533, 953
      II, 13, 145, 340, 428, 610-612, 1029, 1133,
                                                           Triethylamine
          1137
                                                              1, 547, 567, 944, 950, 953, 967, 1062, 1092
   Triethylene glycol
                                                              11, 655, 814, 815
      11, 45, 95, 113, 116, 117, 119, 120, 123,
                                                              IV, 77-84
          128, 129, 130, 133, 134, 135, 141, 142,
                                                           Dimethy 1-3, 3-buty lamine
          143, 382
                                                              IV, 84
      IV, 249
                                                        C6H18Nh
C6H1405
                                                            Triethylenetetramine
   Diglycerol
                                                               I, 763
      IV, 269
                                                        C6H190
C6H1406
                                                           Mesityl oxide
   Manni tol
                                                              I, 867
      II, 884, 888, 889, 1030, 1069, 1120, 1125,
          1127, 1132, 1138, 1141, 1142
                                                        C6BH1503
      IV, 269-271, 828
                                                           Ethyl borate
   1-Rhamnose hydrate
                                                              1, 793, 794, 994, 1002, 1012, 1016, 1038,
      II, 1105, 1115, 1120, 1122, 1125, 1127, 1133
                                                                  1040
   Dulcitol
                                                              III, 1162
      II, 1141
      IV, 271
   Isodulcitol
      IV, 271
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C6BrC1H4
                                                        C6Br3H30
   p-Chlorobromobenzene
                                                           Tribromphenol sym.
       I, 179, 346, 776, 799
                                                              II, 541, 961, 1176
      II, 336, 350, 377
                                                        C6Br3HuN
    o-Chlorbromobenzene
                                                           2,4,6-Tribromaniline
      I, 754
                                                              I, 1080
C6BrHLI
                                                       C6C1Hh I
   p-Bromoi odbenzene
                                                          p-Chloriodobenzene
      I, 348, 349
                                                              1, 179, 347, 348
C6BrH60
                                                       C6ClH50
   o_Bromphenol
                                                           o-Chlorphenol
      II, 351, 441, 517, 518, 528, 614, 622, 623,
                                                              11, 150, 163, 170, 173, 189, 348, 349, 351,
          916, 1025, 1166, 1168, 1175
                                                                  440, 441, 515, 517, 528, 531, 614, 622,
   p_Bromphenol
                                                                 710-712, 722, 723, 731, 753, 759, 768,
      II, 541, 1175
                                                                 777, 786, 787, 790, 791, 797, 798, 807,
   Bromphenol ?
                                                                 916, 1021, 1025, 1036, 1157, 1170, 1175
      11, 1090
                                                              IV, 341
C6BrH6N
                                                          m-Chlorphenol
   o-Bromaniline
                                                              II, 163, 384, 712
      I, 1228
                                                              IV, 341
      II, 761
                                                          p_Chlorphenol
   p_Bromaniline
                                                             II, 163, 170, 174, 347, 349, 352, 441, 516,
      III, 1128, 1129
                                                                 518, 528, 531, 613, 615, 617, 620-624,
                                                                 712, 723, 731, 753, 777, 787, 798, 808,
C6BrH8N
                                                                 918, 959, 961, 1015, 1036, 1037, 1039,
   Aniline hydrobromide
                                                                 1040, 1169, 1175, 1178
      I, 1083
                                                              IV, 341
C6BrH1102
                                                       C6C1H6N
   Ethyl bromisobutyrate
                                                          o-Chloraniline
      II, 645
                                                             I, 559, 940, 1108
C6Br2H6N
                                                             IV, 130
   2,4-Dibromaniline
                                                          m_Chloraniline
      11, 761
                                                             I, 559, 940
                                                              IV, 130
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p-Chloraniline
       I, 516, 559
       IV, 130
C<sub>6</sub>C1H<sub>8</sub>N
   2-Picoline hydrochloride
      I, 1084
   4-Picoline hydrochloride
      I, 1084
   Aniline hydrochloride
      II, 700
      IV, 145, 757, 827
C6ClH9O4
   Methyl chlorsuccinate d
      II, 606
C6C1H1102
   Butyl chloracetate
      I, 425, 490, 498, 753, 755
      II, 605
      III, 1108
      IV, 60
   Isobutyl chloracetate
      1, 498, 832, 835, 836
      111, 1109
      IV, 60
C6C12H120
   p-Chlorex
      1, 396, 399, 401, 413, 418
      II, 418
C6C1H1302
   Chloracetal
      I, 402, 426, 428, 489, 490, 845, 1003
      II, 418, 455
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C6C1H11N
   Pipecoline hydrochloride
       II, 700
       IV, 147
C6C1H16N
    Triethylamine chlorhydrate
       IV, 141, 142
 C6Cl2H10N2
    o-Phenylenediamine hydrochloride
       IV, 147
 C_6C1_2H_40
    2,4-Dichlorphenol
       II, 384
 C6Cl2H5N
    1,2,4-Dichloraniline
       I, 1073
       II, 761
C6C13N3O6
   Trichlortrinitrobenzene
       I, 639, 647
C6C13H30
   Trichlorphenol sym.
       11, 541, 756, 761, 959, 1176
C_6C1_3H_90_2
    Butyl trichloracetate
       III, 1109
    Isobutyl trichloracetate
       III, 1109
C6C15H0
   Pentachlorphenol
```

11, 350, 352, 761

 $C_6C1_5H_2N$ Pentachlor aniline I, 776, 778 11, 761 C6H2N4O8 1,2,4,6-Tetranitrobenzene 1, 650, 653, 656, 658, 660, 665 1,3,4,5-Tetranitrobenzene II, 961 C6H3N3O6 Trinitrobenzene sym. 1, 624, 640, 644, 650, 653, 660, 666, 800, 1024_1026, 1027, 1115_1117, 1122, 1130, 1132, 1133, 1139, 1140, 1143, 1155, 1202, 1204, 1209, 1212, 1214, 1220, 1224, 1228 11, 906, 907, 960, 961 C6H3N3O2 Picric acid, 2,4,6-Trinitrophenol 11, 148, 165, 175, 177, 178, 180, 181, 182, 192, 193, 194, 196, 198, 200, 203, 204, 205, 353, 354, 384, 448, 523, 527, 530, 534, 538, 539, 620, 758, 761, 774, 790, 793, 800, 804, 805, 811, 918, 925, 927, 930, 937, 946-948, 954, 957, 958, 960-963, 968-972, 1016, 1021, 1022, 1042, 1044, 1092, 1093, 1158, 1160, 1163, 1167, 1168, 1170-1174, 1178-1181 IV, 346, 829 C6H3N3O8 2,4,6-Trinitroresorcinol II, 525 Styphnic acid

II, 961, 964-968, 972, 1158, 1160, 1162, 1164, 1167-1169, 1176, 1178-1182

 $C_6H_{\mu}N_{\epsilon}O_{\mu}$ o-Dinitrobenzene 1, 624, 643, 650, 652, 655, 659, 1097, 1111, 1114, 1116, 1129, 1132, 1142, 1154, 1208, 1223, 1224 II, 906, 959 III, 1152 m-Dinitrobenzene 1, 600, 604, 624, 634, 637, 643, 644, 649, 650, 652, 655, 657, 659, 660, 665, 781, 797, 998, 1001, 1019, 1022, 1023, 1034, 1090, 1097, 1111, 1114-1117, 1122, 1125-1127, 1129, 1132, 1143, 1146, 1154, 1163 1173, 1186, 1212, 1214, 1216, 1220, 1223, 1224, 1225-1227 II, 906, 959, 960, 1010, 1011 III, 1151, 1152 p_Dinitrobenzene 1, 624, 644, 650, 652, 655, 657, 660, 665, 997, 1097, 1111, 1116, 1117, 1129, 1132, 1143, 1155, 1223, 1224, 1227 II, 906, 960 IV, 662 C6H4N2O5 3,4-Dinitrophenol II, 165 IV, 344 3,5-Dinitrophenol II, 165 IV, 345 2,3_Dinitrophenol II, 165

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0- Iodphenol

II, 1175

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p-Iodphenol
      II, 541, 1175
C6H5NO
   Nitrosobenzene
      I, 1098, 1221
C6H5NO2
   Ni trobenzene
      1, 586, 587, 588-95, 596-600, 603-605, 607,
         618-623, 631, 632, 633, 636, 642, 643,
         655, 779, 781, 782, 783, 786_789, 790,
         792, 796, 797, 798, 800, 940-941, 946,
         947, 992, 993, 994, 995, 997, 998_999,
         1003, 1005, 1006, 1010, 1019, 1024, 1027,
          1033, 1034, 1045-1047, 1049-1052, 1088,
          1092, 1094-1096, 1101-1107, 1109, 1113,
          1135, 1138, 1140-1142, 1145, 1147, 1154,
          1162, 1168, 1179, 1197, 1198, 1206,
          1208, 1216, 1220-1223
      11, 899-905, 957-959, 1008-1010
      III, 1145-1151
      IV, 128, 752, 753, 757, 794, 803, 808, 818
   2-Pyridinecarboxylic acid
      II, 1246
   3-Pyridinecarboxylic acid
      II. 1246
   4-Pyridinecarboxylic acid
      II. 1247
   Nicotinic acid
      II, 1271, 1272
   Isonicotinic acid
      II, 1272
   Picolinic acid
      II, 1272
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C6H5NO3

o-Nitrophenol

II, 146, 148, 164, 170, 174, 179, 189, 190, 197, 202, 346, 348-350, 352, 382, 439, 441, 446, 508, 516, 522, 527, 530, 533, 539, 542, 619, 621, 713, 732, 733, 740, 744, 749, 757, 764, 773, 788, 789, 799, 802, 803, 810, 916-918, 923, 929, 932, 953, 961, 962, 967, 969, 1021, 1024-1026, 1028, 1034, 1037-1041, 1043, 1090, 1171, 1172, 1176-1178

III, 1206

IV, 343, 741, 820

m-Nitrophenol

II, 165, 171, 177, 179, 197, 202, 383, 384, 439, 446, 508, 516, 522, 530, 533, 539, (19, 713, 733, 740, 744, 750, 757, 764, 774, 803, 810, 917, 923, 930, 932, 953, 954, 1090, 1021, 1024, 1034, 1041, 1043, 1091, 1177-1179

IV, 343, 820

p-Ni trophenol

II, 165, 171, 177, 190, 191, 197, 202, 346, 348, 439, 446, 508, 516, 523, 527, 530, 533, 539, 616, 619, 713, 714, 733, 740, 745, 750, 757, 764, 773, 789, 799, 803, 811, 917, 923, 924, 928, 930, 933, 945, 956, 957, 967, 970, 1021, 1024, 1034, 1042, 1043, 1091, 1172, 1177-1179

111, 1207

IV, 343, 820

C6H5NO4

2-Nitroresorcinol

IV, 345

4-Nitroresorcinol

11, 1181

IV, 345

4-Nitrohydroquinone

11, 524, 1181, 1182

IV, 346

3-Nitropyrocatechol

11, 524, 1181

IV, 345

4-Nitropyrocatechol

II, 1181

IV, 345

 $C_6H_5N_3O_4$

2,4-Dinitroaniline

I, 1090, 1227, 1234, 1242, 1243

11, 967

C6H6N2O

Nicotinamide

1, 1160

11, 945, 1000, 1001

p-Nitrosoaniline

I, 1242

```
C6H6O3
C6H6N202
   o-Nitroaniline
                                                           Pyrogallol
      1, 627, 781, 788, 794, 993, 1011, 1020,
                                                              11, 174, 175, 176, 179, 193, 201, 447, 514,
                                                                  521, 527, 529, 533, 614, 618, 710, 730,
         1035, 1198, 1222, 1224, 1226, 1227, 1240,
         1241
                                                                  737, 742, 747, 756, 760, 763, 768, 780,
      II, 912, 966
                                                                  803, 810, 914, 929, 932, 936, 937, 951,
      IV, 129
                                                                  1014, 1018, 1023, 1032, 1041, 1043,
   m-Nitroaniline
                                                                  1082, 1164
                                                              IV, 339
      1, 627, 646, 662, 782, 788, 794, 993, 1011,
         1020, 1024, 1035, 1173, 1188, 1189, 1198,
                                                           Phloroglucinol
         1215, 1218, 1222, 1224, 1226, 1227, 1240
                                                              11, 1032
         -1242
                                                        C6H6O6S2
      II, 912, 966
                                                           m-Benzenedisulfonic acid
      IV, 129
                                                              IV, 435
   p-Nitroaniline
      I, 606, 627, 628, 634, 635, 637-639, 649,
                                                        C6H2NO
         782, 795, 993, 1012, 1020, 1035, 1222,
                                                           o-Aminophenol
         1224, 1227, 1228, 1232, 1240-1242
                                                              II, 164, 189, 196, 199, 446, 731, 787, 939,
      II, 912, 967
                                                                  942, 953, 955, 1176
      III, 1158
                                                              IV, 342
      IV, 129
                                                           m-Aminophenol
                                                              II, 164, 189, 195, 197, 199, 446, 713, 732,
C6H60S
                                                                  738, 744, 749, 765, 773, 788, 940, 959,
   2-Acetylthiophene
                                                                  960, 962, 1158, 1160, 1163, 1164, 1176,
      IV, 54
                                                                  1177
C6H602S
                                                              IV, 342
   3_Methy1-2-thiophene carboxylic acid
                                                           p-Aminophenol
      II, 1247
                                                              II, 164, 189, 195, 197, 199, 732, 940, 1157,
   5-Methy1-2-thiophene carboxylic acid
                                                                  1163, 1176, 1177
      II, 1249, 1269
                                                              IV, 342
                                                           1-Acetylpyrrole
                                                              11, 998
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C6H8N2O3
                                                            Cyclohexanone
   Aniline nitrate
                                                               1, 402, 415, 426, 428, 457, 486, 490, 693,
      IV, 146, 827
                                                                  714, 731, 734, 737, 747, 845, 857, 862,
C6H8N6O18
                                                                  868, 969
   Nitromannite
                                                               11, 496, 507, 518, 560
       1, 642, 998, 1019, 1184, 1185, 1187, 1207,
          1212, 1213, 1216-1219
                                                        C6H1002
                                                           Methyl vinyl carbinol acetate
       II, 957
                                                              II, 595
C6H8OLS
                                                           Acetony lacetone
   Tetrahydrothiophene-2,5-dicarboxylic acid d
                                                              1, 419, 422, 497, 511
      II, 1270
                                                              II, 495, 518
C6H9NO2
                                                        C6H1003S2
   Ethyl succinamide
                                                           Ethyl ( carbothiolon ) lactic acid d
      I, 636, 799
                                                              II, 1241
      II, 931
                                                           Ethyl (carbothiolon) lactic acid l
C_6H_9N_3S_3
                                                           Ethyl ( carbothiolon ) lactic acid rac.
   Trimethyl triothiocyanate
                                                              11, 1241, 1242
      I, 1168
                                                        C6H1004S
C6H, NO2
                                                           Ethylsulfide succinic acid d
   Nitrocellulose
                                                              1221, 1222, 1240
      III, 1157
                                                           Ethylsulfide succinic acid rac.
C6H10N2O2
                                                              II, 1222
   Sarcosin anhydride
                                                            Thiodilactic acid l
      1, 641, 800, 1021, 1025, 1026, 1114, 1115,
                                                              11, 1226
         1120, 1128, 1131, 1134, 1142, 1144, 1157,
                                                            Thiodilactic acid d
         1159, 1160, 1162, 1164, 1180, 1187
                                                               II. 1225
      II, 888, 942, 943, 1001, 1002
                                                           Ethylsulfide succinic acid 1
                                                              II, 1240
C6H100
   Allyl ether
                                                        C6H1004S2
      II, 413
                                                            Disulfidadipic acid d
   Isopropylidene acetone
                                                               II. 1241
      11, 495
                                                            Disulfidadipic acid 1
  Mesityl oxide
                                                              II, 1241
      1, 398, 739, 747, 867, 969
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C6H,005S2
                                                         C_6H_{15}N0
   Dithiodilactic acid d
                                                            Diethyl ethanolamine
       II, 1241
                                                                11, 48, 411, 422, 665
   Dithiodilactic acid 1
                                                         C6H15NO3
       II, 1241
                                                            Triethanolamine
C<sub>6</sub>H<sub>1</sub>N0
                                                                11, 45, 104, 120, 133, 134, 140, 141, 142,
   Hexenoic amide cis.
                                                                    143, 144
       I, 1148, 1152
                                                                IV, 277
   Hexenoic amide trans.
                                                         C6H1602Si
      I, 1148, 1152
                                                             Diethoxydimethyl silane
C6H11NO2
                                                                II, 420
   N-Acetylmorpholine
                                                          C6H17N3O7
      I, 1089, 1090
                                                             Ammonium citrate
   Nitrocyclohexane
                                                                IV, 137
      1, 1104, 1110, 1147
      11, 898
                                                          C6H18OSi2
                                                             Hexamethyl disiloxane
C6H130N
                                                                II, 437
   N.N-Diethylacetamide
      1, 1137
                                                          C6C1H2N3O6
   Capramide
                                                             Picryl chloride, 1-Chloro-2,4,6-Trinitrobenze-
      1, 1146, 1148
   sec. Acetylbutylamine 1
                                                                1, 629, 630, 633, 640, 648, 651, 654, 656,
      II, 990
                                                                   658, 663, 664, 666, 667, 782, 1012, 1035,
                                                                    1228, 1236, 1237, 1243, 1252
C6H13NO2
                                                                II, 913, 970, 971
   Aminocaproic acid
      IV, 424
                                                           C6C12H2N2O1
                                                              2,3_Dinitr-p-dichlorbenzene
C6H14N2O6
                                                                  I, 1253
   Ethylenediamine tartrate d
                                                              2,6-Dinitro-p-dichlorbenzene
      IV, 139
                                                                  I, 1253
C6H15 IS
   Triethylsulfonium iodide
      IV, 150
```

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C6C1H3N2Ou
    1,2,4 -Chlorodinitrobenzene
      1, 629, 633, 637, 649, 663, 782, 943, 947,
         993, 1012, 1035, 1131, 1188, 1215,
         1219, 1227, 1234, 1241, 1242, 1243,
         1252
      II, 913, 970
   1,3,5-Chlorodinitrobenzene
      I, 663
C6C1HnNO2
   o-Chloroni trobenzene
      I, 586, 628, 663, 942, 1020, 1100, 1124,
         1147, 1219, 1247, 1248
      II, 912, 970, 1013
      111, 1159
   m_Chloronitrobenzene
      1, 586, 628, 647, 798, 942, 1020, 1044,
         1100, 1147, 1247, 1249
      11, 912, 913, 970, 1013
      111, 1159
   p-Chlroni trobenzene
      I, 628, 629, 633, 647, 782, 788, 798, 942,
         947, 993, 1012, 1023, 1035, 1044, 1092,
         1100, 1127, 1139, 1147, 1180, 1219,
         1223, 1232, 1242, 1247, 1249, 1250
     11, 913, 970, 1013
     111. 1159, 1160
C6C1H5N2O2
   6,3_Chloronitroaniline
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1, 1254

I, 1254

4,3.Chloronitroaniline

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2,5-Chloronitroaniline
       I, 1254
    4,2-Chloronitroaniline
       I, 1254
    3,4-Chloronitroaniline
       I, 1254
    2,4-Chloronitroaniline
       I, 1254
C<sub>6</sub>Cl<sub>2</sub>H<sub>3</sub>NO<sub>2</sub>
    3,4-Dichloronitrobenzene
       I, 943
       II, 384, 385
    Dichlornitrobenzenes (1,2,3; 1,2,4; 1,3,5;
    1,3,2; 1,4,2)
       I, 943
C_6C1_8H_40_4S_8
   Benzenedisulfochloride m
       I. 876
   Benzenedisulfochloride p
       I, 876
C6BrH2N3O6
   Picryl bromide
       I, 664
C6BrH3N2Ou
   1-3,5-Bromodinitrobenzene
       I, 664
   1,2,4-Bromodinitrobenzene
       1, 1023, 1174
   2,4-Bromodinitrobenzene
       I, 1186, 1196
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C6HuINO2

C6BrH4NO2 o_Bromonitrobenzene I, 629, 944, 1248, 1250, 1251 III, 1160 m_Bromonitrobenzene 1, 629, 664, 1247, 1248, 1249, 1250, 1251, 111, 1161 p-Bromoni trobenzene 1, 629, 664, 1223, 1232, 1249, 1250, 1251, III, 1161 C6BrH11N2O2 1-Bromoisovaleryurea I, 1206 C6Br2C1H4N 2_Chloro_4,6_dibromoaniline I, 1080 C6Br2H3NO2 1,2,4_Dibromonitrobenzene I, 1253 1,2,3_Dibromonitrobenzene I, 1253 C6FHuNO2 m_Fluoronitrobenzene I, 1247 $C_6H_3N_3O_6$ Trinitrobenzene sym. 1, 632, 656, 657, 665, 1010, 1019, 1034 C6H3N3O8 Trinitroresorcinol sym. 11, 174, 178, 180, 181, 182, 193, 196, 198, 200, 203, 205, 353, 354

o-Iodoni trobenzene I. 1252 m-Iodoni trobenzene I, 1247, 1249, 1251, 1252 p-Iodonitrobenzene I, 1252 C6H8N2O2S p-Aminosulfanilamide I, 1178 C6H9NOLS Aniline sulfate IV, 146 C6BrC1H3NO2 1,3,4-Chlorobromonitrobenzene I, 1253 1,3,6-Chlorobromonitrobenzene I, 1253 1,2,3-Chlorobromonitrobenzene I, 1253 1,4,2-Chlorobromonitrobenzene I, 1253 1,4,3-Chlrobromoni trobenzene I, 1253 C6BrH2 INO2 1,3,4-Bromoiodonitrobenzene I. 1253 1,3,6-Bromoiodonitrobenzene I, 1253 C6C1H3 INO2 1,3,4-Chloroiodonitrobenzene

I. 1253

I. 1253

1,3,6-Chloroiodonitrobenzene

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C6C1HaFNO2
     5,2-Fluorochloronitrobenzene
                                                          C2H14
        I, 1252
                                                             Ethylcyclopentane
     2,5-Fluorochloronitrobenzene
                                                                 I, 103, 533
        I, 1252
                                                                 II, 33
     3.6-Fluorochloronitrobenzene
                                                              1,2-Dimethylcyclopentane
        I, 1252
                                                                 II, 33
     3,4-Fluorochloronitrobenzene
                                                              1,3-Dimethylcyclopentane
        I, 1252
                                                                 1,533
     4,3_Fluorochloroni trobenzene
                                                                II, 33
        I, 1252
                                                             Methylcyclohexane
                                                                1, 54, 61, 72, 82, 103, 104, 113, 114, 115,
  C7F14
                                                                   218, 374, 417-420, 540-541, 604-605
     Perfluormethyl cyclohexane
                                                                II, 41, 42, 149, 215
        I, 319
                                                                III, 1036
 C7F16
                                                                IV, 1, 713, 731, 772
    Perfluoroheptane, Hexadecafluorheptane
                                                             1-Heptene
        1, 187, 191, 199, 202, 203, 261, 311, 318
                                                                11, 31
        III, 1062
                                                             2-Heptene
                                                                1, 409, 601
 CyHa
                                                             3_Heptene
     Toluene
                                                                I, 601, 671
        1, 27, 65, 75, 76, 80-84, 101, 103, 112,
                                                             5-Methyl-1-hexene
           113, 114, 115, 117, 121, 127-137, 152-
                                                                I, 409
           158, 272-283, 368-369, 382-384, 483-488,
                                                             2,4_Dimethylpentene
          559-563, 630-633
                                                                I, 601
        11, 106-116, 166-171, 241,245
                                                          C2H16
        111, 1033, 1042-1044
                                                             Heptane
                                                                1, 21, 31, 32, 48-50, 53, 54, 56, 68, 77,
        IV, 1, 3, 650, 667, 714, 731, 756, 775,
                                                                   192-200, 365, 372, 395-398, 524-525,
            805, 806
                                                                   595-598
C7H12
                                                                II, 15-22, 147, 209, 210
  Methylcyclohexene
                                                                111, 1032
      I, 120
                                                                IV, 1, 667, 680, 681, 769
   2,4-Heptadiene
                                                             Trimethylbutane
      1,601
                                                                I, 21, 78, 598
   3_Heptine
                                                             Isoheptane
      I, 601
                                                                I, 526
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11, 339, 377

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2-Methylhexane
                                                         CyBrH15
      I, 77, 526
                                                            Heptyl bromide
      11, 22
                                                                I, 199
      III, 1032
                                                       CyBr3H5
      IV, 769
                                                           1,2,3,4-Tribromotoluene
   3_Methylhexane
                                                              1, 350, 351
      II, 22
                                                           1,2,3,5-Tribromotoluene
      111, 1033
                                                              I, 350
   2,2-Dimethylpentane
                                                           1,2,3,6-Tribromotoluene
      1, 77, 526
                                                              I, 350, 351
      11, 22
                                                           1,2,4,5-Tribromotoluene
  2,3-Dimethylpentane
                                                              I, 350, 351
      I, 77, 526
                                                           1,2,4,6_Tribromotoluene
      II, 22
                                                              I, 350, 351
   2,4-Dimethylpentane
                                                           1,3,4,5-Tribromotoluene
      1, 77, 78, 526
                                                              I, 350, 351
       II, 22
    3,3_Dimethylpentane
                                                       C2C1H2
       I, 77, 526
                                                           o-Chlortoluene
    2,2,3.Trimethylbutane
                                                              1, 221, 222, 340, 343, 346, 350, 755, 799
       1, 78, 526
                                                              II, 337, 350, 378
       II, 22
                                                             III, 1066
                                                          m-Chlortoluene
C7BrH7
                                                              111, 1066, 1067
   o_Bromotoluene
                                                           p-Chlortoluene
       1, 221, 350, 755, 776, 799
                                                              I, 221, 222, 350, 755, 759
       II, 338, 351, 378
                                                              11, 337, 350, 378
   m_Bromotoluene
                                                              111, 1067
       1, 756, 776, 777
                                                           Benzylchloride
       11, 338, 351, 375
                                                              I, 221, 222, 288, 757, 776
   p_Bromotoluene
                                                              11, 339, 377
       1, 221, 272, 283, 287, 331, 333, 348, 350,
                                                              IV, 800
          756, 757, 777, 799, 800
       11, 338, 351, 352, 379
                                                       C7Cl2H6
   Bromtoluene ?
                                                           Benzylidene chloride, Benzal chloride
        11, 337, 339
                                                              I, 758
    Benzyl bromide
                                                              II, 339, 340, 378
        I, 757
                                                              III, 1067
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C2C13H5
                                                         C7H5NO
    Phenyl chloroform
                                                            o-Cyanphenol
       I, 348, 800
                                                               II, 189
       11, 352
                                                            Furfurylamine
    1,1,1-Trichlortoluene
                                                               IV, 84
       I. 809
                                                         C7H6N2
C2C15H3
                                                            Benzimidazol
   Pentachlorotoluene
                                                               1, 1128, 1144
      1, 349, 778
                                                         C2H60
      II, 352
                                                            Benzaldehyde
                                                                1, 402, 424, 425, 426, 428, 450, 490, 498,
C7FH7
   o_Fluorotoluene
                                                                   753, 755, 756, 757, 830, 831, 832, 834,
      I, 283
                                                                   835, 836, 837, 851, 961, 1006
      II, 336
                                                                II, 466, 467, 507, 544, 545
   m_Fluorotoluene
                                                                111, 1082, 1083
      I, 283
                                                                IV, 759, 807, 813
   p_Fluorotoluene
      1, 283, 350
                                                          C7H602
      11, 337
                                                             0-0xybenzaldehyde, Salicylic aldehyde
                                                                11, 161, 186, 439, 514, 701, 1021, 1030,
C7F3H5
                                                                    1031, 1033, 1087, 1157, 1163, 1164,
   1,1,1_Trifluortoluene
                                                                    1171
      IV, 653
                                                                IV, 340
                                                             m-0xybenzaldehyde
C7H4O7
                                                                II, 161, 959, 960, 962, 963, 1088, 1157,
   Meconic acid
                                                                    1160, 1161, 1163, 1164, 1172
      II, 568
                                                                IV, 340
C<sub>2</sub>H<sub>5</sub>N
                                                            p-0xybenzaldehyde
   Benzonitrile
                                                                II, 161, 187, 722, 1088, 1157
      1, 546, 773, 775, 776, 777, 953, 955, 959,
                                                                IV, 340
         960, 986, 987, 1059, 1090
      II, 696, 697, 812
      III, 1113, 1114
      IV, 749
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Benzoic acid
       II, 236, 237, 245, 252, 256, 257, 363,
           370, 377, 379, 454, 458-460, 553, 554,
           563, 565-567, 569, 572, 632, 642, 643,
           647, 649, 816, 824, 828, 829-831, 833-
           835, 838-840, 842, 854, 855, 861, 862,
           864, 867, 980, 988, 990-992, 994, 996,
           998, 999, 1001, 1003, 1010-1013, 1049,
           1056, 1057, 1060, 1065, 1067, 1069,
           1076, 1079-1081, 1083, 1086, 1088,
           1089, 1189, 1203, 1232-1234, 1244-1247
       III, 1221
       IV, 426, 661, 676, 744, 815, 822
C7H603
   Resorcylaldehyde
      IV, 812
   o-Oxybenzoic acid, Salicylic acid
      II, 209, 238, 256, 454, 457, 554, 564, 572,
          632, 816, 829-831, 836, 840, 842, 864,
          981, 989, 991, 995, 996, 998, 999, 1011.
          1012, 1050, 1058, 1061, 1065, 1066,
          1069, 1075, 1076, 1080, 1088, 1089,
          1203, 1244, 1247, 1252
      IV, 429, 744
   m-Oxybenzoic acid
      II, 238, 457, 991, 993, 995, 1058, 1065,
          1248, 1252, 1253
      IV, 429, 430
   p-0xybenzoic acid
      11, 238, 457, 991, 995, 1001, 1058, 1065,
          1077, 1248, 1252, 1253, 1254
      IV, 430
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Sesame oil
     I, 870
     II, 1037
C7H7I
   p-Iodotoluene
      I, 757, 777, 778, 800
      11, 339, 352, 379
C<sub>7</sub>H<sub>7</sub>N
   Methylene aniline
      I, 1104
   Benzyl cyanide
      II, 697
C2H2N2
    Benzimidazol
      I, 1084
CyH80
   Benzyl alcohol
       11, 13, 14, 15, 24, 25, 27, 40, 46, 47,
           103, 116, 127, 133, 274, 293, 336, 338,
           339, 382, 418, 421, 425, 430, 466, 472,
           502, 593, 607, 663, 664-667, 670, 671,
           675, 890, 903, 905, 1040, 1134, 1137,
           1139, 1140, 1144
       111, 1204
       IV, 280, 281, 712
   Anisole
       1, 402, 426, 428, 444, 445, 490, 494, 678,
          707, 757, 759, 823, 836, 926, 996
       II, 421, 422, 423, 457
       III, 1079, 1080
       IV, 9, 705, 764, 780
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936, 937, 939, 951, 958, 1015, 1020,
o-Cresol
                                                             1025-1029, 1031, 1040, 1086, 1155,
   11, 150, 156, 166, 184, 201, 342, 344,
                                                              1156, 1166-1169
       347-351, 382, 395, 437, 440-442, 448,
                                                          III, 1206
       449, 507, 510, 511, 517, 518, 528,
                                                          IV, 337, 819
       613-617, 620-623, 701, 706, 716, 719,
                                                       Cresol ?
       729, 735, 751, 754, 759, 760, 762,
                                                          11, 512, 708, 721, 1020, 1156
       769, 775, 780, 781, 793, 795, 801,
                                                   CyHa02
       806, 809, 812, 916, 922, 926, 928,
                                                      Monomethyl resorcinol
       936, 939, 951, 1015, 1019, 1026-1028,
                                                         11, 193, 624, 1026, 1030, 1173
       1031, 1084, 1153, 1165-1167
                                                       Guaiacol
   III, 1206
                                                          11, 160, 161, 170, 186, 429, 445, 507, 512
   IV, 336, 717, 819
                                                             528, 615, 621, 623, 702, 709, 715, 717
m_Cresol
                                                             722, 726, 729, 738, 741, 747, 752, 754,
   11, 150, 156, 157, 158, 159, 167, 168,
                                                             763, 769, 776, 784, 785, 796, 797, 801,
       169, 184, 193, 194, 195, 343, 345,
                                                             806, 916, 923, 927, 951, 1020, 1026,
       347, 352, 382, 395, 438, 440, 442,
                                                             1030, 1040, 1087, 1173
       449, 507, 511, 518, 528, 531, 613,
                                                         IV, 814
       615, 620-623, 706, 707, 716, 719-721,
       725, 726, 729, 735, 751, 759, 760,
                                                      Orcinol
                                                          II, 731, 738, 742, 746, 760, 809, 922, 966,
       762, 769, 775, 781, 782, 795, 801,
       806, 812, 916, 922, 925, 928, 936,
                                                              967, 1084, 1162, 1170
                                                      Salicyl alcohol
       939, 951, 958, 1015, 1019, 1020, 1025_
                                                          II, 120, 149, 173, 174, 382, 952
       1027, 1029, 1031, 1040, 1085, 1154,
                                                       4,5_Dimethy1-1,2-pyrone
       1155, 1165, 1167, 1168
   111, 1206
                                                          I, 1025
   IV, 336
                                                          11, 449, 539, 540, 570-573
                                                          III, 1079
p-Cresol
                                                          IV, 60
   II, 146, 150, 159, 160, 169, 184, 193_196,
       343, 345, 347, 348, 350, 352, 382,
                                                   C2H803
       395, 438, 440, 442, 449, 507, 511,
                                                      Furfuryl acetate
       518, 526, 528, 531, 542, 613, 615-617,
                                                         I, 510
       620-623, 701, 707, 708, 716, 721, 726,
                                                      Ethyl furoate
       729, 735, 751, 752, 754, 759, 760,
                                                         1,510
       762, 769, 774, 776, 782-784, 795, 801,
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806, 809, 812, 917, 823, 926, 928,

2-Ethylpyridine C2H9N IV, 100 o-Toluidine 4-Ethylpyridine I, 522, 523, 533, 539, 541, 554, 561, 776, IV, 100 938, 954, 958, 971, 1065, 1068, 1070, 1071, 1108, 1109 1,1-Lutidine I, 990 II, 667, 668, 724-726, 832, 833 III, 1127 2,3_Lutidine IV, 87, 674, 754, 790 IV, 100, 792 2,4-Lutidine m-Toluidine 1, 523, 529, 541, 776, 938, 954, 987, 1065, 11, 793 1069, 1110 IV, 100, 101, 793 II, 668, 669, 726, 833, 834 2,5-Lutidine IV, 101 IV, 754, 790 p-Toluidine 2,6-Lutidine 1, 516, 523, 524, 529, 539, 543, 554, 561, 1, 764, 765, 766, 770, 771 11, 682, 792, 793, 856 570, 576, 581, 764, 775, 776, 938, 970, 971, 974, 976, 979, 988, 1062, 1070-IV, 102, 793 CyH10N2 1072, 1110-1112 2,4-Toluenediamine II, 669, 670, 727-734, 834-836 IV, 87, 754, 791 II, 750 2-Amino-4,6-dimethylpyridine Methylaniline II, 858 I, 522, 523, 524, 533, 541, 543, 776, 1100, 1101 C7H10O3 II, 664, 715, 716, 825 Orcinol hydrate III, 1128 II, 1162 IV, 674, 789 C2H1006 N-Methyl aniline 1, 938 Methyl acetylmalate Benzy lamine I, 912 1, 561, 953, 954, 955, 1064, 1070, 1118 C2H11N II, 751-753, 836 Cyclohexane nitrile IV, 89 I, 1055, 1058 Toluidune C2H120 I, 1072 Methylcyclohexanone

11, 560

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C7H1204
                                                            Pimelic acid
   Ethyl malonate
                                                               II, 1003, 1218, 1219
      1, 477, 735, 749, 753, 754, 757, 834, 868,
                                                           β-Methyladipic acid
         885, 899, 901, 906, 910, 1046
                                                               IV, 396
      II, 641
                                                        C2H12O6
      III, 1106
                                                           Quinic acid
      IV, 763
                                                              IV, 437
   Dimethyl methylsuccinate
      II, 599
                                                        CyH, LO
                                                           o-Methylcyclohexanol, 1,2-Methylcyclohexanol
   Butyl malonic acid
                                                              II, 28, 46, 47, 48, 101, 118, 119, 129,
      IV, 393
                                                                  130, 132, 334, 337, 411, 415, 424, 426,
   Propylsuccinic acid rac.
                                                                  429, 436, 469, 492, 584, 596, 597, 606,
      II, 1222
                                                                  1037, 1107, 1139, 1143
  Propylsuccinic acid d
                                                              IV, 280
      II, 1221
                                                           m-Methylcyclohexanol, 1,3-Methylcyclohexanol
  Propylsuccinic acid 1
                                                              II, 101, 424, 584, 1107
      II, 1221
                                                           p-Methylcyclohexanol
  Isopropylsuccinic acid d
                                                              11, 101, 273, 339, 382, 584, 1107
      II, 1222
                                                           Vinyl isoamyl ether
  Isopropylsuccinic acid 1
                                                              11, 413
      II, 1222
                                                           Dipropyl ketone
  \alpha -Methyl-\alpha -ethylsuccinic acid 1
                                                              I, 426, 428, 493, 494, 703, 731, 740, 845,
     II, 462, 1221, 1224
                                                                 847, 864, 968
  α-Methyl-α'-ethylsuccinic acid d
                                                              II, 492
     11, 1055
                                                           Diisopropyl ketone
   Dimethylglutaric acid 1
                                                              11, 492
      II, 1224, 1225
                                                           Methyl isoamyl ketone
   Dimethylglutaric acid d
                                                              I, 428, 493, 846, 863, 967
      II, 1225, 1226
                                                           Methyl amyl ketone
  Mesodimethylglutaric acid
                                                              II, 559
     II, 1218
                                                           Heptanone ?
  Dimethylglutaric acid rac.
                                                              IV, 52
                                                          Heptaldehyde, Oenanthole
     11, 1218, 1225, 1226
                                                              II, 466
   a-Ethylglutaric acid d
                                                              IV, 23
      II, 1055
      IV, 395
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Ethyl valerate
C7H1402
                                                              I, 473, 492, 704, 740, 898
   Amyl acetate
      1, 428, 471, 509, 704, 732, 740, 828, 882-
                                                              11, 592, 637
         883, 884, 891, 935
                                                              IV, 56
      11, 588, 635
                                                           Ethyl isovalerate
      III, 1102
                                                              I, 732, 739, 891
      IV, 56
                                                              11, 592
   Isoamyl acetate
                                                              IV, 56
      1, 471, 696, 704, 732, 737, 740, 831, 863,
                                                           Methyl caproate
         890, 892
                                                               1, 732, 740, 1043
      11, 588, 635
                                                               11, 593
      III, 1102, 1103
                                                               IV, 56
      IV, 56
                                                            Heptanoic acid
   Butyl propionate
                                                               II, 212, 231, 251, 253, 361, 370, 377,
      1, 428, 492, 732, 845, 896
                                                                   379, 457, 460, 565, 566, 640-643, 845
      11, 589
                                                                   853, 976, 1009, 1011, 1013, 1070,
      IV, 56
                                                                   1087
   Isobutyl propionate
                                                            1, Methyl caproic acid, 1-Methyl hexanoic
      1, 488, 496, 704, 732, 867, 987
                                                            acid
      II, 589
                                                               11, 207, 232, 452, 549
      IV, 56
   Propyl butyrate
                                                        C7H1403
      1, 428, 492, 493, 732, 740, 831, 845, 863,
                                                           Isobutyl lactate
         864, 897
                                                              II, 46, 47, 129, 145, 331, 338, 339, 411,
      II, 590
                                                                   419, 429, 436, 467, 591, 871, 1030,
      IV, 56
                                                                   1031, 1130
   Propyl isobutyrate
                                                           Dimethoxy-3-pentanone
      1, 987
                                                              IV, 53
      II, 591
                                                           Methoxybutane_1,3_diol acetate, Butoxyl
      IV, 56
                                                              1, 425, 426, 428, 832, 836, 892, 899, 900
   Isopropyl isobutyrate
      1, 739, 740, 747
      II, 591
      IV, 56
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C_{2}H_{16}O_{3}
C7H1406
   Methyl a-glucoside d
                                                           Ethyl orthoformate
                                                              1, 492, 731, 834
      IV, 24
                                                              III, 1104
C_7H_{15}N
                                                          Glycerol diethyl ether
   1_Ethylpiperidine
                                                              II, 126, 425, 598, 665, 902, 1029
      IV, 91
                                                       C7H1604
   Azacyclooctane
                                                          Methyoxy triglycol
      IV, 91
                                                              II, 133, 134, 139, 141, 142, 145, 428, 430,
C7H160
                                                                 610, 611, 683, 908, 910, 1028, 1029,
   Heptyl alcohol, Heptanol n
                                                                  1138
       11, 46, 47, 48, 49, 129, 261, 290, 332,
          334, 335, 337, 338, 339, 382, 411,
                                                       C7H7NO2
          415_417, 424, 426, 429, 436, 466, 469,
                                                          Anthranilic acid
          593, 597, 662, 671, 876, 1025, 1129,
                                                             II, 855, 982, 989, 1002
          1130
                                                          o-Aminobenzoic acid
       111, 1199
                                                             II, 554, 1050, 1058, 1065
       IV, 238
                                                             IV, 432
                                                          m-Aminobenzoic acid
   4-Heptanol
       IV, 711
                                                             II, 1002
                                                             IV, 433
    2-Methy1-5-oxyhexane
       II, 416
                                                          p-Aminobenzoic acid
    Diisopropyl carbinol
                                                             II, 1002
                                                             IV, 433
       11, 492, 1131
    Ethyl amyl ether
                                                        C7H7NO2
       1, 677, 707, 750
                                                           Salicylamide
    Ethyl tert.amyl ether
                                                              IV, 342
       11, 409
                                                           Phenylurethane
       IV, 8
                                                              IV, 757
 C7H1602
                                                       C7H7NO3
    Propyl formal, Propylal
                                                           o-Nitroanisole
       I, 834
                                                              1, 941, 1217
       IV, 9
                                                              II, 911
    Isopropyl formal
                                                              III, 1157
       IV, 9
    1,7-Heptanediol
       II, 416
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m-Nitroanisole
                                                         C7H9NO3
       I, 1217
                                                            Ammonium salicylate
    p-Nitroanisole
                                                               11, 515
       1, 647, 1123, 1163, 1215, 1217, 1221, 1232,
                                                         C7H9N30
                                                            1-Phenylsemicarbazide
       II, 911
                                                               I, 1198
       III, 1158
                                                         C2H10N2O3
C7H8NS
                                                            Resorcinol-urea ( equimolecular complex )
   Pheny l thi our ea
                                                               I, 1180
      II, 956
                                                               IV, 120
C_7H_8N_20
                                                         C7H1005S2
   N.Nitroso-N.Methylaniline
                                                            Xantogensuccinic acid (d), (1) and rac.
      I, 1171
                                                               II, 1241, 1242
   p-Aminobenzamide
                                                            Ethyl (carbothiolon) malic acid (d), (1)
      I, 1178
                                                            and rac.
   Pheny lurea
                                                               II, 1242
      1, 1153, 1156, 1184
                                                         C2H11NO3
      II, 884
                                                            Ethyl-1,5-pyrrolidon-2-carboxylate
C_7H_8N_2S
                                                                I, 614, 782
   Phenylthiourea
                                                         C_7H_{12}N_2O_3
      I, 1156, 1184
                                                            N,N_Dipropionylurea
C7H9NO
                                                                1, 1119, 1153, 1156
   o-Anisidine, o-Aminoanisole
                                                                II, 928
      1, 638, 641, 798, 800, 995, 1024, 1108
                                                         C7H12O3S2
      II, 886
                                                            Ethyl (carbothiolon) oxybutyric acid (d)
   p-Anisidine
                                                             and rac.
      I, 1110
                                                                II, 1241, 1242
      11, 939, 940
                                                            Ethyl (carbothiolon) oxybutyric acid (1)
                                                                II, 1242
C7H9NO2
   Pyridine acetate
                                                         C7H12O4S
      I, 613
                                                            Propylsulfide succinic acid (d) and rac.
      IV, 140
                                                                II, 1222
                                                            S-Propylsulfide succinic acid (d) and (1)
                                                                 11, 1240
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S-Methylsulfidethylsuccinic acid (d) and (1)
                                                         C7C1H4NO5
                                                             5_Nitro_4_oxy_2_chlorbenzoic acid
        II, 1240
                                                                II, 1265
C2H13NO
                                                         C_{7}C1H_{5}O_{4}S
    Heptenoic amide cis, and trans.
                                                             o-Benzoic acid sulfochloride sym. and asym.
       I, 1149, 1152
                                                                I, 876
C_7H_{13}N_3O_7
                                                         C7C1H6NO2
    2-Methyl naphthalene picrate
                                                             Chlornitroacetanilide 3,4; 3,6; 2,6; and 2,4
       I, 1256
                                                                I, 1254
    1-Methyl naphthalene picrate
                                                             o-Nitrobenzylchloride
       I, 1256
                                                                1, 629
                                                             Chlornitrotoluene 2,4
C2H15N0
                                                                1, 1232, 1255
   Heptamide
                                                             Chlornitrotoluene 6,3; 5,2; 6,2; 4,2; 3,2;
      I, 1146
                                                             4,3 and 2,3
C2H1604S2
                                                                I, 1255
   Sulfonal
                                                          C,C1H,02S
      1, 873, 1053, 1171, 1180, 1204
                                                             Toluenesulfochloride o and p
      11, 543, 624, 649, 944
                                                                1,876
C7H18OSi
                                                          C7C1H1602N
   Butoxytromethyl silane
                                                             1-Leucine methyl ether hydrochloride
      II, 420
                                                                II, 892
C7BrH4NO4
                                                          C2C12H3NO4
    Bromnitrobenzoic acid 1,2,5; 1,2,3; 1,3,6 and
                                                             5-Nitro-2,4-dichlorbenzoic acid
    1,3,2
                                                                II, 1265
       II, 1265
C2Br2H2NO
                                                          C_7C1_2H_40_3S
                                                             Sulfobenzoyl dichloride m and p
    Benzamide bromide
       I, 1223
                                                                I, 876
                                                          C2FH6NO2
C7C1H4NO4
                                                             Fluornitrotoluene 2,4 and 3,4
   Chlornitrobenzoic acid 1,2,5; 1,2,3; 1,3,6
   and 1,3,2
                                                                 I, 1255
       II, 1265
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2,3,4-Trinitrotoluene, \(\beta\)-Trinitrotoluene
C2H5NO3S
                                                              1, 1196, 1234
   Saccharin
                                                           2,4,5-Trinitrotoluene,7-Trinitrotoluene
      I, 1204
                                                              1, 1196, 1212
      IV, 126
                                                        C2H5N2O2
CyH6 INO2
                                                           2,4,6_Trinitroanisole
   2-Iodo-3-nitrotoluene
                                                               1, 658, 666, 1213, 1245
      I, 1236
                                                           Trinitroanisole ?
C7H9NO2S
                                                               1, 1188, 1211, 1240
   Toluenesulfonamide o and p
                                                           2,4,6-Trinitro-m-cresol
      I, 1199
                                                               11, 193, 200, 201, 203, 204, 205, 960,
                                                                   964, 965, 968, 1180, 1182
C7H9NO3S
   m-Methamethoxybenzene sulfonamide
                                                       C7H5N508
      I, 1090
                                                          Tetry1
C_2H_{10}N_2O_3S
                                                              1, 646, 654, 657, 666, 1211, 1215, 1232,
   2-Mercapto-4-methyl-5-imidazole (ethyl) car-
                                                                 1234, 1235, 1237, 1241-1243
   bonate
                                                              11, 967, 968
      II, 945
                                                           N-Methyl-N,2,4,6-tetranitroaniline
                                                              1, 1020, 1662
C2H5N3O6
   2,4,6-Trinitrotoluene, α-Trinitrotoluene
                                                        C2H6N2O3
      1, 625, 632, 646, 652, 653, 657, 658, 662,
                                                           Nitroformanilide o and p
         666, 781, 788, 799, 999, 1002, 1010,
                                                              1, 1244
         1019, 1025, 1099, 1115, 1117, 1118,
                                                        C7H6N2O4
         1123, 1126, 1127, 1139, 1143, 1146,
                                                           2,4-Dinitrotoluene
         1186, 1118, 1123, 1126, 1127, 1139,
                                                              1, 625, 645, 651, 653, 656, 658, 661, 665,
         1146, 1186, 1188, 1196, 1210, 1211,
                                                                 999, 1001, 1098, 1111, 1115, 1117, 1118,
         1212, 1214, 1217, 1220, 1225, 1234-1237,
                                                                 1123, 1125, 1126, 1128, 1130, 1133,
      11, 910, 911, 963, 964, 1012
                                                                 1143, 1155, 1186, 1196, 1210, 1212, 1214,
      III, 1156
                                                                 1217, 1225, 1230, 1231, 1233, 1234
      IV, 752, 755, 757, 829
                                                              11, 910, 962, 963, 1012
```

2,6-Dinitrotoluene

I, 625, 645, 651, 653, 661, **1098**, 1111, 1130, 1133, 1231, 1233, 1234

II, 910

III, 1156

3,4-Dinitrotoluene

1, 625, 645, 651, 653, 656, 661, 1098, 1112, 1130, 1134

3,5-Dinitrotoluene

1, 646, 651, 662, 1099, 1112, 1130, 1134

4,6-Dinitrotoluene

I, 661

 $C_7H_6N_2O_5$

2,4 and 2,6-Dinitroanisole

I, 1245

3,5-Dinitroanisole

I, 1215, 1217

4,6-Dinitro-o-cresol

II, 447, 542

 $C_7H_6O_3S$

Benzene sulfonic acid

III, 1223

C₇H₇NO

Formanilide, N-Phenylformamide

1, 610, 940, 1021, 1022, 1137, 1171

II, 879

Benzamide

I, 1007, 1027, 1028, 1053, 1170, 1171

II, 879, 931-934, 991

IV, 123, 657, 658, 746

 α -Benzaldoxime, Benzaldoxime anti

11, 1044, 1251, 1152

α !Benzaldoxime

II, 1152,

β -Benzaldoxime

II, 1151, 1152

Benzaldoxime ?

II, 50, 1045

IV, 322

C7H7NO2

o-Nitrotoluene

I, 587, 624, 798, 995, 1038, 1046, 1048, 1106, 1141, 1147, 1209, 1216, 1229,1230

II, 907, 908, 961, 1011

III, 1152, 1153

IV, 128, 794, 803

m_Nitrotoluene

1, 644, 1017, 1038, 1044, 1048, 1049, 1111,

1147, 1190, 1209, 1216, 1229, 1230

11, 908, 909, 961, 1011

111, 1153, 1154

p-Nitrotoluene

I, 604, 625, 645, 660, 941, 947, 999, 1038,

1050, 1092, 1098, 1111, 1122, 1126,

1127, 1140-1142, 1147, 1163, 1186, 1210,

1212, 1214, 1216, 1220, 1225, 1229,

1230, 1231, 1232

11, 909, 910, 961, 962, 1011

III, 1154, 1155

Nitrotoluene?

1, 634, 783, 1049

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C7BrH502
                                                        C2C1H502
   o_Brombenzoic acid
                                                            o-Chlorbenzoic acid
      11, 240, 1260, 1261
                                                               11, 239, 1244, 1247, 1253, 1258-1260
   m_Brombenzoic acid
                                                               IV, 432
      11, 1261, 1262
                                                            m-Chlorbenzoic acid
   p_Brombenzoic acid
                                                               II, 210, 240, 1245, 1248, 1253, 1258-1260
      II, 1248, 1260, 1262
                                                            p-Chlorbenzoic acid
      IV, 432
                                                               II, 210, 240, 1245, 1248, 1254, 1258-1261
                                                               IV, 432
C2BrH6NO
   3,4 and 2,4-Bromonitrotoluene
                                                        C2C1H6NO
      I, 1254
                                                            o and p-Chloroformanilide
                                                              I, 1181
C7BrH70
   o-Bromanisole
                                                        C2C1H20
      I, 506, 754, 757, 1004
                                                            o-Chloranisole
      II, 426
                                                               I, 1004
   p-Bromanisole
                                                              II, 448
      1, 835, 846
                                                            m-Chloranisole
                                                               I, 1004
C7Br2H7N
                                                           p-Chloranisole
   2,6 and 4,6-Dibromo-3-amino-1-methylbenzene
                                                              I, 846, 1004
      I, 1080
                                                        C7C1H10N
CaBraH1004
                                                           2,6 and 2,5-Lutidine hydrochloride
  \alpha,\alpha'-Dibrompimelic acid (d), (1), rac. and
                                                              I, 1084
                                                           2,4-Lutidine hydrochloride
      II, 1239
                                                              1, 1084, 1085
C2C1HuNO3
                                                        C2C1H1302
   o and p-Nitrobenzyl chloride
                                                           Isoamyl chloroacetate
      I, 1254
                                                              I, 1039
C2C1H50
                                                              II, 605
   Benzoyl chloride
                                                              III, 1109
      1, 460, 496, 499, 502, 503, 752, 1027
                                                              IV, 60
      II, 473
      III, 1091, 1092
      IV, 676, 751
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C7C12H402 C2H5 IO2 2,5-Dichlorbenzoic acid o-Iodobenzoic acid 11, 1259, 1261 11, 1245, 1262 2,3-Dichlorbenzoic acid m-Iodobenzoic acid II, 1261 II, 1245, 1262, 1263 p-Iodobenzoic acid C2C12H5NO2 11, 1245, 1262, 1263 2,6,4-Dichlornitrotoluene IV, 432 I, 1232, 1255 o, m and p-Nitrobenzylidene chloride C7H5NOS I. 1254 4-0xybenzthiazol II, 1150 C7C13H1,02 Amyl trichloracetate C7H5NO3 I, 408 o-Nitrobenzaldehyde Isoamyl trichloracetate 1, 626, 1027, 1204, 1218 III, 1110 11, 965, 1012 IV, 130 C2FH502 m_Nitrobenzaldehyde o-Fluorbenzoic acid 1, 626, 627, 1027, 1156, 1218 II, 1252, 1258 11, 965, 1012, 1013 m_Fluorbenzoic acid IV, 130 II, 1253, 1258 p-Nitrobenzaldehyde p_Fluorbenzoic acid 1, 626, 1205, 1218 II, 1244, 1254, 1258, 1259 11, 965, 1013 IV, 130, 818 C7H3 N3 O4 2,4-Dinitrobenzonitrile C2H5 NO4 I, 1134 o-Nitrobenzoic acid II, 216, 240, 250, 251, 257, 358, 363, C7H3N3O8 454, 554, 555, 572, 996, 1050, 1051, 2,4,6-Trinitrobenzoic acid 1059, 1061, 1065, 1248, 1260, 1264 II, 1012 IV, 433 CyHuN2O6 m_Nitrobenzoic acid 1,3,5-Dinitrobenzoic acid II, 240, 358, 363, 454, 555, 632, 996, IV, 434 1051, 1059, 1061, 1245, 1247, 1249, 1253, 1254, 1260-1262, 1264 IV, 433

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p-Nitrobenzoic acid
                                                             m-Xylene
       II, 241, 455, 555, 996, 1077, 1249, 1264
                                                                1, 76, 117, 118, 139-141, 154, 159-161,
       IV. 434
                                                                    164, 165, 285, 286, 370, 384, 494, 495,
                                                                   565, 566, 635, 636
CyHs NOs
                                                                II, 122-125, 172, 248
   1,2,3 and 1,2,5-Nitrosalicylic acid
                                                                III, 1047
      II, 1265
                                                                IV, 668, 715, 731, 732, 775
C2H5NS
                                                             p-Xylene
   Phenyl thiocyanate
                                                                I, 76, 113, 118, 141, 154, 155, 160, 162,
      I, 800, 945, 996, 1091, 1093
                                                                   164, 165, 286, 287, 370, 495-497, 566,
   Phenyl isothiocyanate
                                                                   636
      1, 1091, 1092, 1121, 1138
                                                                II, 125-127, 172, 173, 249
                                                                III, 1048, 1049
C7H5NS2
                                                                IV, 668, 715, 776
   Mercaptobenzothiazole
                                                             Xylene ( mixture )
      I, 1104, 1140
                                                                1, 81, 84, 98, 101, 154, 155, 166, 288,
C<sub>8</sub>H<sub>6</sub>
                                                                   497, 566-567
   Pheny lacety lene
                                                             Ethylbenzene
      IV, 652
                                                                1, 77, 80, 81, 84, 98, 99, 115, 121, 137,
                                                                   138, 152, 153, 158, 159, 160, 283, 284,
CaHa
                                                                   489, 563, 633
   Phenylethylene
                                                                II, 116, 117, 171, 245
      I, 84, 285
                                                                III, 1045
      II, 246
                                                                IV, 714, 775
   Styrene
       1, 99, 158, 159, 492, 493, 567, 635
                                                        CaH14
       II, 120
                                                           2,4 Octadiene
   Polystyrene
                                                               I, 532, 601
       1, 166
                                                           4-Methylheptadiene 1,5
                                                               I, 409, 532, 601
CaH10
                                                           2,2 Dimethylhexadiene 3,4
    o-Xylene
                                                               1, 532, 601
       1, 116, 139, 153, 154, 159, 161-163, 285,
                                                           2-Octine
          370, 493, 635
                                                               1,601
       II, 121, 122, 247, 248
       III, 1047
       IV, 714, 775
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C₂H₁₆ 1007

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C_8H_{16}
                                                            Octane
   Ethylcyclohexane
                                                               1, 21, 57, 68, 78, 79, 80, 81, 200-202,
       I, 115
                                                                   372, 398-400, 526, 527, 598
      II, 215
                                                               II, 23, 24, 148, 210
       IV, 772
                                                               III, 1033
   o-Dimethylcyclohexane
                                                               IV, 1, 769
       1, 104, 116, 542
                                                            Isooctane
   m-Dimethylcyclohexane
                                                               I, 68, 202, 400, 401, 527
      I, 542, 605, 606,
                                                               II, 148
      II, 43, 216
                                                               111, 1033
      III, 1036
                                                            2-Methylheptane
   p_Dimethylcyclohexane
                                                               1, 81, 598
      I, 104, 117, 118, 542
                                                               IV, 770
   Dimethylcyclohexane ( mixture )
                                                            3_Methylheptane
      I, 606
                                                               1, 202, 526, 598
   Propylcyclopentane
                                                               II, 25
      I, 533
                                                               III, 1033
  1,1,3; 1,2,3 and 1,2,4-Trimethylcyclopentane
                                                            4-Methylheptane
      I, 103
                                                               I, 526, 598
  Diisobutylene
                                                               II, 25
      I, 81
                                                              3_Ethylhexane
      111, 1035
                                                                 1, 526, 598
   6-Methy 1-1-heptene
                                                                 11, 25
      11, 31
                                                             3,3-Dimethylhexane
   Caprylene
                                                                II, 26
      IV. 771
                                                             2,2-Dimethylhexane
   2-Octene
                                                                1,526
      I, 409, 531, 532
                                                                II, 26
   4-Methy1-2-heptene
                                                            2,3; 2,4; 3,4-Dimethylhexane
      1, 409, 532, 601
                                                                I, 526, 598
   1-Octene
                                                                11, 25
   I, 531
IV, 271
Octene ( mixture )
                                                            2,5-Dimethylhexane
                                                               I, 598
      1, 80, 98, 99, 531
                                                               11, 25, 26
                                                             Diisobutyl
CaH18
                                                                1, 82,,202,,400, 527, 598
                                                                11, 25, 211
                                                                111, 1033
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CaBr2Ha
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2-Methy1-3-ethylpentane
                                                       C 8H60
      1, 526, 598
                                                          Coumarone
      II, 25
                                                              1, 511, 513, 976
   3_Methy1-3_ethy1pentane
      1, 526
                                                       CaHaOa
                                                          Phthalide
    2,2,3_Trimethylmentane
                                                              I, 977, 1026
       1, 526
                                                           o-Phthalic aldehyde
    2,2,4-Trimethylpentane
                                                              IV, 23
       I, 69, 78, 79, 82-84, 203, 401, 528, 598
                                                       C_8H_6O_3
       11, 25, 26
                                                           o, m and p-Aldehydebenzoic acid
       III, 1033
                                                              II, 238
       IV, 633
                                                              IV, 428
   2,3,4-Trimethylpentane
                                                           Piperonal
       I, 84, 526
                                                              I, 852, 919, 957
   2,2,3,3-Tetramethylbutane
                                                              II, 507, 568, 569
      I, 78, 526
                                                       C 8H604
CaBraHa
                                                           Phthalic acid
   Styrene dibromide
                                                              11, 626, 816, 1050, 1058, 1244
      1, 352
                                                              IV, 426
CaFH9
                                                       CaHaN
   p_Fluorxylene
                                                           Indole
      11, 340
                                                              1, 558, 579, 584, 957, 1084, 1144
CaHhO3
                                                              II, 801
                                                           Benzy lcyanide
   Phthalic anhydride
      1, 508, 869, 878, 979, 1029
                                                              1, 940, 955
      11, 574, 575, 626
                                                           p-Tolyl cyanide
      IV, 55
                                                              IV, 803
                                                           o and m-Methylbenzonitrile
                                                              III, 1114
                                                           p-Methylbenzonitrile
                                                              111, 1115
```

```
α-Toluic acid
C<sub>8</sub>H<sub>8</sub>O
                                                               IV, 823
   Acetophenone
                                                             1,2,5; 1,4,6 and 1,4,5-Hydroxytolualdehyde
      1, 401, 458, 694, 732, 734, 851, 871, 971.
                                                                II, 161
                                                                 IV, 340
      II, 504, 528-531, 564, 565
      III, 1089
                                                             o-Toluic acid
      IV, 54, 804, 813, 817
                                                                 11, 572, 573, 1092, 1232-1234, 1247
                                                                 IV, 427, 823
CaHaOa
                                                             m-Toluic acid
   Furfurylidene acetone
                                                                 11, 572, 1093, 1232, 1233, 1234, 1247,
       II, 542
                                                                     1248
   Monofurfurylidene acetone
                                                                 IV, 427, 823
       11, 542, 543
                                                             p-Toluic acid
   Phenyl acetate
                                                                 11, 568, 573, 864, 1001, 1232, 1233, 1234,
       1, 424, 425, 700, 753, 757, 869, 986, 1038
                                                                     1247, 1248, 1249
       II, 608, 622
                                                                 IV, 427, 823
       IV, 56, 706
   Methyl benzoate
                                                         C_8H_8O_3
       1, 479, 910, 912, 1048
                                                             Anisic acid
       II, 608, 609, 623, 645
                                                                11, 995, 997, 1257
       III, 1107
                                                             Mandelic acid ?
       IV, 56
                                                                II, 1073, 1228, 1230, 1238, 1255
   Benzyl formate
                                                             Mandelic acid (1)
       1, 757, 910, 1031
                                                                11, 1226, 1228, 1255
       II, 607, 623, 645
                                                                IV, 431
       IV, 56
                                                            Mandelic acid rac.
    Ani saldehyde
                                                                11, 573, 855, 1050, 1057, 1061, 1228,
       1, 839, 851
                                                                    1230, 1254, 1255
       II, 468, 508, 545
                                                                IV, 431
       IV, 813
                                                             o-Methoxybenzoic acid
    Phenylacetic acid
                                                                 11, 1002
       11, 237, 252, 256, 257, 379, 386, 459, 460,
                                                             p-Methoxybenzoic acid
           567, 572, 573, 640, 646-648, 989, 993,
                                                                II, 1002
           1049, 1057, 1060, 1087, 1092, 1189,
                                                                IV, 429
           1232-1234, 1244
                                                             1,2,3 and 1,2,4-Hydroxytoluic acid
       III, 1221, 1222
                                                                II, 209, 238
       IV, 428, 815
                                                                IV, 430
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1,2,5-Hydroxytoluic acid
                                                        C_8H_1ON
       II, 210, 238
                                                            o-Xylidine
       IV, 430
                                                              I, 516
    1,3,4 and 1,4,3-Hydroxytoluic acid
       11, 239
                                                        C 8H100
       IV, 430
                                                           Phenetole
    Phthalic anhydride
                                                               1, 426, 445, 446, 500, 678, 708, 723, 731,
       I, 933
                                                                  733, 823, 832, 836, 955, 996
    Resacetophenone
                                                               11, 423, 424, 458
       II, 942
                                                               111, 1081
       IV, 812
                                                               IV, 9, 764
    Methyl-p-oxybenzoate
                                                           Methyl benzyl ether
       11, 942, 952, 955, 1039, 1069
                                                               1, 426, 428, 499, 837, 997
   Methyl salicylate
                                                               II, 429, 459
       11, 162, 172, 173, 187, 439, 445, 621,
                                                               IV, 655
           812, 916, 918, 961, 1028, 1029, 1089,
                                                           Methyl-o-cresyl ether
           1157
                                                               III, 1081
    Vanillin
                                                            Methyl-m-cresyl ether
       11, 507, 540, 624, 754, 935, 1088, 1089,
                                                               I, 708
           1173
                                                               III, 1081, 1082
                                                               IV, 764
    o-Vanillin
                                                           Methyl-p-cresyl ether
       11, 1173
                                                               I, 753, 832, 835, 837, 997
C 8H8O4
                                                               II, 426, 459
   Gallacetophenone
                                                           Phenyl ethyl alcohol, Phenyl ethanol, Benzyl
                                                           carbinol
      IV, 812
                                                                11, 103, 104, 133, 336, 382, 421, 426,
0_e H_8 \Im
                                                                    667, 670, 903, 908, 1040, 1134, 1141,
   o, m and p-Tolyl methyl ether
                                                                    1143, 1144, 1145
      I, 446
                                                                IV, 281, 712
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Xylenol ( mixture )
                                                          Dimethylhydroquinone
       11, 382, 724
                                                             II, 1170
    o-Ethylphenol
                                                          Phenoxyglycol
       11, 443, 735
                                                             11, 141, 430, 1137, 1138
    m-Ethylphenol
                                                          Guethol
       11, 1169
                                                             I, 754
    p-Ethylphenol
                                                             11, 174, 186, 350, 441, 531, 623, 724, 916,
       11, 174, 184, 352, 382, 441, 443, 447, 528,
                                                                  1026, 1030, 1037, 1087
           531, 621-623, 724, 735, 796, 801, 1039
                                                           Veratrole, Pyrocatechol dimethylether
           1040, 1168, 1169
                                                              I, 447, 495, 756, 823, 838, 956, 998
    o-Xylenol as.; 3,4-Xylenol
                                                              II, 425, 447, 460
       11, 148, 184, 350, 352, 444, 448, 518,
                                                              IV, 9
           531, 621-624, 671, 708, 784, 796, 916,
                                                           Dimethyl resorcinol ether
           940, 1169
                                                              I, 837, 956, 998
       IV, 819
                                                              II, 425
    o-Xylenol vic.; 2,3-Xylenol
                                                           Hydroquinonedimethyl ether
       11, 345, 708, 784, 796, 1169
                                                              1, 998, 999
    m-Xylenol sym.; 3,5-Xylenol
                                                              II, 448
       11, 441, 444, 672, 708, 784, 796
                                                       CBH, OO3
       IV, 281
                                                          Propyl furoate
    m-Xylenol vic.; 2,6-Xylenol
                                                             I, 510
       11, 345, 350, 352, 444, 518, 528, 531,
                                                          o-Hexahydrophtalic anhydride cis and trans
           621, 622, 671, 796, 1168
                                                             1,878
    m-Xylenol as.; 2,4-Xylenol
                                                          Methyl salicylate
       11, 345, 441, 444, 623, 671, 801, 1027,
                                                             II, 350, 352
           1031, 1169
    p-Xylenol; 2,5-Xylenol
                                                       CaHioOu
       11, 127, 444, 540, 708, 736, 784, 796.
                                                          Methy lphthalate
       IV, 820
                                                             IV, 56
C8H1002
   1-Naphthoic acid
      11, 993
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C 8H12O4
CaH, N
                                                          Ethyl fumarate
   Ethylaniline, Phenylethylamine
                                                             1, 501, 509, 754, 835, 837, 838, 871, 910,
      I, 522, 523, 903 - 908, 954, 956, 1063,
                                                                912, 913, 1047
         1069, 1070, 1104, 1105
                                                             II, 600, 622, 643
      11, 652, 666, 716, 717
                                                          Ethyl maleate
      IV, 789
                                                             1, 509, 835, 837, 838, 869, 871, 910, 912,
   Dimethylaniline, Dimethylphenylamine
                                                                1046
      1, 525, 552, 553, 561, 564, 565, 566, 764,
                                                             11, 599, 600, 621, 642
         765, 772, 774, 777, 945, 952, 953, 956,
                                                             IV, 56
         960, 961, 965, 970, 972, 980, 983, 988,
                                                          Ethoxydiglycol acetate
         1062, 1064, 1068, 1101-1104
                                                             II, 602
      II, 664, 666, 717-723, 825-827
      IV, 87, 674, 720, 789, 790
                                                       C8H1206
   o-Xylidine as., 3,4-Xylidine
                                                          Dimethyl acetylmalate
      I, 775, 939, 1113
                                                              1, 478, 699, 851, 860, 886, 913, 935, 989
      II, 671
                                                             II, 602
   m-Xylidine sym., 3,5-Xylidine
                                                          Methyl dimethoxysuccinate
      II, 735, 736
                                                              IV, 60
      IV, 754
                                                       CaH13N
   m-Xylidine as., 2,4-Xylidine
                                                          2,4-Dimethy1-3-ethylpyrrole
      I, 568, 672, 777, 955, 956, 1113
                                                              I, 1082
   m-Xylidine vic., 2,6-Xylidine
                                                              II, 843
      II, 671
   m-Xylidine ?
                                                       C gH140
      II, 1113
                                                          Methy lheptenone
   2,4,6-Collidine
                                                              1, 401, 425, 426, 498, 835, 836, 868, 1015
      II, 682, 793
                                                              11, 494, 517
      IV, 103
                                                       C 8H1402
C 8H 1 80
                                                          Cyclohexyl acetate
   Isobutyl ether
                                                              I, 472
      1, 398, 420
                                                              II, 636
                                                          Dimethyl acetal
                                                              1, 390, 410
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C_8 H_{14} O_3
  Ethyl ( ethyl ) acetoacetate
      I, 478, 990
      II, 604
  Ethyl (dimethyl) acetoacetate
      II, 604
  Hexahydromandelic acid rac.
      II, 1255
CoHinOu
   Butylsuccinic acid (d), (1) and rac,
      II, 1222
   \alpha-Methyl-\alpha-isopropylsuccinic acid (d) and (1)
       II, 1222, 1224
   Isopropylglutaric acid (d) and (1)
      II, 1220
   Suberic acid
      11, 1000, 1207, 1218, 1219
   Ethyl succinate
      1, 477, 501, 509, 754, 834, 835, 838, 871,
          885, 886, 901, 906, 910, 911, 989, 1046,
      II, 598, 621, 641, 642
   Propyl oxalate
      1, 501, 509, 749, 754, 757, 909, 1045
      II, 640
   Methyl adipate
      1, 911
   Ethylglycol acetate
       1, 402
   1.3_Butanedioldiacetate
      I, 885, 906, 907
  2,3-Butylene glycol diacetate
      II, 601
```

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Meso-2,3-butyleneglycoldiacetate
      II, 638
   Isoamylmalonic acid
      IV, 393
C 8H 1406
   Ethyl tartrate (d)
      11, 97-99, 114, 122, 124, 127, 132, 139,
          259, 260, 271, 272, 292, 293, 297, 298,
          304, 306, 309, 310, 311, 314, 329, 330,
          331, 332, 335, 341, 415, 423, 424, 428,
          429, 467, 472, 473, 485, 506, 583, 598-
          600, 602-604, 607, 608, 663, 664, 666,
          668-670, 675, 676, 681, 683, 685, 697,
          870, 903, 904, 906, 907, 909-913, 1031-
          1034, 1044, 1071, 1106, 1115, 1116,
          1120, 1126, 1130, 1133, 1137, 1138,
          1140, 1141
      IV, 273, 274, 752, 754, 804, 819
   Ethyl tartrate r
      II, 685, 686, 1140
   Ethyl mesotartrate
      II, 686
   Dimethyl dimethoxysuccinate
      1,478
      II, 602
C 8H160
   Methyl hexyl ketone
      1, 424, 425, 426, 498, 500, 835, 836, 847,
          863, 1015
      11, 491, 517
C_8H_{16}O_8
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2-Ethylcaproic acid, 2-Ethylhexanoic acid
 Methyl-n-amylacetate
                                                            II, 1085, 1086
    11, 635, 636
                                                         Caprylic acid
 Methyl isoamylacetate
                                                            11, 207, 214, 232, 244, 247, 256, 357,
    II, 636
                                                                361, 365, 374, 377, 458-460, 545, 550,
Ethyl caproate
                                                                630, 633, 639, 845, 853, 861, 865,
    1, 500, 864, 899, 900, 1043
                                                                976, 1005, 1006, 1010, 1011, 1013,
    II, 593
                                                                1046, 1053, 1062, 1063, 1083, 1190,
   IV, 56
                                                                1191
Propyl isovalerate
                                                    C 8H1603
    1, 402, 426, 428, 741, 836, 868, 898, 1042
                                                        Isoamyl lactate
    II, 592
                                                           II, 326, 339, 466, 504, 593, 599, 608, 871,
    IV. 56
Butyl butyrate
                                                               898, 1031, 1137, 1139
   1, 426, 428, 670, 746, 837, 897, 1040
                                                       Butoxyglycolacetate, Butoxyethylene glycol,
   11, 590
                                                       Butoxyethylacetate
   IV, 56
                                                           I, 863
Butyl isobutyrate
                                                          II, 601, 616, 636, 643
   I, 1041
                                                          IV, 59
                                                       Diethoxy-3_butanone
                                                          IV, 53
Isobutyl butyrate
    1, 426, 428, 704, 732, 868, 897, 1041
                                                     C 8H1604
    11, 591
                                                        Diethylene glycol monoethyl ether acetate,
    IV, 56
                                                        Ethoxydiethylene glycol acetate
 Isobutyl isobutyrate
                                                            1, 913, 914
    1, 428, 492, 704, 732, 740, 875, 891, 898,
                                                           IV, 59
      987, 1041
                                                     C_8H_{17}I
    11, 592
                                                        Octyliodide
    111, 1104
                                                            I, 337
    IV, 56
 Isoamyl propionate
                                                     C8H17N
    1, 402, 426, 428, 670, 704, 854, 896, 1039
                                                        Coniine
    11, 589
                                                           1, 558, 1067, 1142
    IV, 56
                                                           II, 684
 Hexyl acetate
                                                        1-Propylpiperidine
    1, 832, 836, 851, 863, 892, 1038
                                                           IV, 91
    IV, 588
```

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C 8H1 802
                                                          CaH180
   Dipropylacetal
                                                             Butyl ether
      IV, 9
                                                                1, 390, 444, 493, 506, 731, 737, 831, 953,
                                                                   993, 994
C_8H_{18}O_3
                                                                II, 410, 455
   Diethyl carbitol
                                                                IV, 8, 779, 800
       II, 440
                                                            Isobutyl ether
   Butoxydig1yco1
                                                                I, 420, 831, 953, 994
       11, 683, 886, 908, 1028, 1131, 1137
                                                                II, 411, 455
C 8H18O5
                                                                IV, 8
   Tetraglycol
                                                            tert. Butyl ether
      11, 1133
                                                                IV, 800
                                                            Octyl alcohol, Capryl alcohol
C10H220
                                                                11, 21, 38, 46, 93, 145, 291, 332, 334,
   Decyl alcohol
                                                                    338, 339, 416, 417, 421, 424, 495, 504,
      11, 12, 39, 93, 382, 407, 425, 483, 503,
                                                                    593, 596-597, 605, 608, 662, 664-667,
          582, 587, 597, 608, 611, 690, 886, 897,
                                                                    670, 671, 696, 876, 902, 1025, 1130
          908, 910
                                                                IV, 238
   Tripropylcarbinol
                                                            Octanol_2 (d)
      11, 93
                                                                II, 12, 93
C_8H_{18}S
                                                            Octanol-2 rac.
   Butyl sulfide
                                                                II, 93
      1, 490, 831, 845, 847, 960, 1005
                                                            Octanol-2 ?
      II, 419, 441, 456
                                                                II, 1025
   Isobutyl sulfide
                                                            Octyl alcohol sec. , Methyl hexyl carbinol
      1, 832, 845, 847, 1005
                                                               II, 261, 338, 339, 495, 1130
      II, 420, 441, 456
                                                               III, 1199
C<sub>R</sub>H<sub>19</sub>N
                                                             2-Ethyl hexanol, 2-Ethyl hexyl alcohol
  Diisobutylamine
                                                               II, 38, 382
      1, 563, 565, 967, 968, 969
                                                               IV, 238
   Octylamine
                                                             Isooctyl alcohol
      IV, 72
                                                               II, 46, 47, 49, 119, 129, 145, 411, 415,
CaHaoSi
                                                                    426, 429, 436, 467, 591, 596-598, 662,
   Tetraethylsilane
                                                                   671, 876, 1130
      I, 151, 515
      11, 145
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C<sub>8</sub>BrClH<sub>8</sub>
                                                             CaClH12N
   Styrene chlorbromide
                                                                 2,4,6-Collidine hydrochloride
       1, 352
                                                                    I, 1085
                                                                 Dimethylaniline hydrochloride
CaBrHy02
   Methy 1-p-bromobenzoate
                                                                 Phenylethylamine hydrochloride
       I, 916
                                                                    IV, 147
CaBrHaNO
                                                             CaClHaoN
   p-Bromoacetanilide
                                                                 Octylammonium chloride
       I. 1181
                                                                    II, 697
C<sub>8</sub>BrH<sub>9</sub>O
                                                                    IV, 143
   p_Bromophenetole
                                                                 Tetraethylammonium chloride
       1, 837, 839, 1004
                                                                    IV, 142
       II, 426, 427, 448
                                                             C_{8}C1_{8}H_{14}O_{8}
CaBrHaoN
                                                                 Phtalyl dichloride sym, and asym,
    Tetraethylammonium bromide
                                                                    I, 876
       IV, 144
                                                                 Phtalyl chloride ( mixture )
                                                                    I, 919
CaBraHaNO
    2,4-Dibromoacetanilide
                                                             C 8C12H7NO
       I, 1182
                                                                 2,4-Dichloroacetanilide
                                                                    I, 1181, 1182
CaBraH502
    Acetyltribromphenol
                                                             C 8H402S
       II, 1176
                                                                 Thiophthalic anhydride
                                                                    I, 878, 1052
C 8C1H70
    α-Chloracetophenone
                                                             C<sub>8</sub>H<sub>4</sub>O<sub>2</sub>Se
       I, 1021
                                                                 Selenophtalic anhydride
    p-Chloracetophenone
                                                                    I, 878
        11, 538
                                                             CaHaNO2
 CaClHyOa
                                                                 Phthalimide
    Methy_p_chlorbenzoate
                                                                    I, 1029, 1052
        I, 916
                                                                 m-Cyanobenzoic acid
    Chlorphenylacetic acid rac.
                                                                    11, 1253, 1258, 1260, 1262, 1263
        II, 1254
                                                                p-Cyanobenzoic acid
                                                                    11, 1254, 1259, 1261, 1262, 1263
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C8H5NO5
    Nitropiperonal
        II, 1013
 CaH6NaO6
    Methyl-3,5-dinitrobenzoate
        I, 1246
 CaH2NO
    0xindole
        I, 1164
 C<sub>8</sub>H<sub>2</sub>NO<sub>3</sub>
     m_Nitroacetophenone
        1, 604, 606, 637, 649
C8H7NO4
    Methyl-p-nitrobenzoate
        I, 1218, 1222, 1246
    6-Nitro-3-methylbenzoic acid
        II, 241, 345
    o-Nitrophenyl acetate
        11, 241, 245
C 8H7N2O2
    Furfuralazine
       I, 1128
CaHaNaOs
   2,4-Dinitroacetanilide
       I, 1244
C8H7N3O6
   2,4,6-Trinitroxylene
      1, 646, 652, 654, 657, 662, 1226, 1228,
          1232, 1234, 1235, 1237
      II, 964, 965
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C 8H7N3 07
   Trinitrophenetole
      I, 1213
CaHaNaOs
   Nitroacetanilide o, m and p
      1, 610, 1244
      IV, 129
C_8H_8N_2O_4
   4,6-Dinitro-m-xylene
      I, 662
   2,3 and 2,6_Dinitro_p_xylene
      I, 1237
CaHaNaO5
   2,4,3_Dinitrophenetole
      I, 1112, 1245
C_8H_8N_4O_6
   3,4,6_Trinitrodimethylaniline
      I, 1243
C<sub>8</sub>H<sub>9</sub>NO
   p_Aminoacetophenone
       1, 606, 634, 637, 638, 639, 649, 1188
   Acetanilide, Phenylacetamide
      1, 610, 630, 639, 779, 1053, 1093, 1108,
          1120, 1126, 1129, 1154, 1161, 1167,
          1168, 1170, 1171-1173
      II, 879, 880, 934-936, 992
      III, 1143
      IV, 123
   N_Methylformanilide
      1, 1171
   Acetophenoxime
      II, 50
```

```
CgHgNO2
                                                         CaHioNaO
   p-Anisaldoxime and
                                                             p_Aminoacetanilide
      11, 1152
                                                                I, 634, 641, 649
   Anisaldoxime cis. and trans.
                                                             p-Ni trosodimethylaniline
      11, 1152
                                                                1, 1097, 1109, 1112, 1113, 1114, 1117,
   Methy I-m-aminobenzoate
                                                                   1118, 1131, 1134, 1139, 1140, 1144,
      I, 1164, 1203, 1205
                                                                   1147, 1170
   Methyl-p-aminobenzoate
                                                                11, 968
      I, 1164, 1203, 1205
                                                             p-Nitrosoethylaniline
   p-Nitroethylbenzene
                                                                I, 1243
      1, 1221
                                                             Monoacetylphenylenediamine o, m and p
   1,3,4-Nitroxylene
                                                                I, 612
      111, 1157
                                                                IV, 124
   Phenoxyace tamide
                                                         CaH10N2O2
      11, 992
                                                             p-Nitroethylaniline
   p_Methylaminobenzoic acid
                                                                I, 1243
      11, 1002
   Phenylaminoacetic acid (1)
                                                         C8H10N402
      11, 1074
                                                             Caffeine
 C_8N_9N0_3
                                                                I. 1203
    o-Ni trophenetole
                                                                IV, 124
       II, 911
                                                          C 8H10O3S
    p-Nitrophenetole
                                                             2,5-Dimethylbenzene sulfonic acid
       1, 1124, 1147, 1213, 1218
                                                                IV, 435
       II, 911
                                                          C 8H11N0
   Neoorthoform
                                                             Phenylethanolamine
      II, 890, 891, 943
                                                                 11, 45, 119, 120, 129, 130, 133, 143, 382
C_8 H_9 N_3 0_4
                                                             o-Phenetidine, o-Aminophenetole
   3,4-Dinitrodomethylaniline
                                                                1, 996, 999, 1017, 1147, 1190
      I. 1243
                                                                II, 886, 940
C<sub>8</sub>H<sub>10</sub>NS
                                                             p-Phenetidine, p-Aminophenetole
                                                                 1, 639, 648, 649, 800, 940, 997, 1000
   Benzy 1 thiourea
                                                                11, 886, 887, 940
      11, 956
```

```
C 8H 1 1 NO 2
   Aniline acetate
      I, 613
      IV, 140
C_8H_{12}N_2O_3
   Veronal
      1, 1024, 1156, 1159, 1160, 1180
      11, 928
C 8H1202S
   Dimethylsulfolane
      1, 495, 497
C_8H_{14}O_4S
   Butylsulfide succinic acid (d); (1) and rac.
       11, 1223
C_8 H_{14} O_5
   Ethyl malate
       11, 96, 271, 394, 484, 583, 1105
       IV, 806
C 8H15NO
    Octenoic amide cis. and trans.
       I, 1149, 1152
C 8H17NO
    Caprylamide
       1, 601, 608, 783, 1007, 1013, 1031, 1036,
          1086, 1149
       II, 871
 C8H12NO2
    2-Ni trooctane
       I, 588
```

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CaHtaOS
   Butyl sulfoxide
      1,876
C8H1802S
   Butyl sulfone
      I, 876
C 8H 180 4 S2
   Methylsulfonal
      1, 1053
INOSH 2
   Tetraethylammonium iodide
      I, 1067, 1071
CaHaoOuSi
   Ethyl ortho-silicate
      1, 832, 836, 837, 899
CaClH18NO2
   1-Leucine ethyl ether hydrochloride
      II, 892
CaBrClHa0a
   Phenyl chlorobromoacetate
      1, 916
CaClIHaNO
   Chloroiodoacetanilide
      I, 1182
CaBrClH7NO
   2,4-Chlorobromoacetanilide
      1, 1181, 1182
   4,2-Chlorobromoacetanilide
      I, 1182
   Chlorobromoacetanilide
      I, 1182
```

```
CaClHaNO
                                                              1,2,4-Trimethylbenzene, Pseudocumene
   o-Chloroacetanilide
                                                                 1, 56, 98, 122, 142, 155, 160, 166, 288,
      I, 614, 1181
                                                                    499, 500, 568, 638
      IV, 130
                                                                 II, 130, 173, 251
   m-Chloroacetanilide
                                                                 III, 1051
      I, 614, 1181
                                                                 IV, 776
      IV, 131
                                                              Mesitylene
   p-Chloroacetanilide
                                                                 1, 55, 84, 85, 118, 126, 142, 166, 288,
      1, 615, 1181
                                                                    499, 567, 568, 638
      IV, 131
                                                                 11, 131, 132, 174, 250
                                                                 III, 1050, 1051
C 8C1H6 IO2
                                                                 IV, 1, 715, 776, 805, 807
   Phenyl chloroiodoacetate
      1, 916
                                                          C9H16
                                                             Octahydrindene
C<sub>9</sub>H<sub>8</sub>
                                                                I, 122
   Indene
                                                             1 Cyclohexyl-2-propene
      I, 151, 172, 300, 513, 584, 655
                                                                I, 420, 542, 606
      II, 145, 201, 257
                                                             4-Nonine
CoH10
                                                                1, 601
   Hydrindene
                                                         C<sub>9</sub>H<sub>1B</sub>
      I, 122
                                                             1-Nonene
                                                                I, 409, 532, 601
C_9H_{12}
                                                             4-Nonene
   Propy1benzene
                                                                I, 532, 601
      1, 116, 123, 125, 126, 158, 284, 489, 633
                                                            Methy1-2-Octene
      II, 117, 171, 246
                                                                1, 409, 532
      III, 1045, 1046
                                                            4-Methyloctene
      IV, 714
                                                               I, 601
   Isopropylbenzene, Cumene
                                                            4,6-Dimethylheptene
      I, 84, 116, 125, 138, 153, 158, 160, 284,
                                                               I, 601
         490, 563-564, 633, 634
                                                            4,5 and 4,6-Dimethy1-2-heptene
      11, 117, 118, 171, 246
                                                               I, 409, 532
      111, 1046
                                                            1,2,4-Trimethylcyclohexane
   Methylethylbenzene ( mixture )
                                                               I, 542
      1, 497, 567
                                                           4,5,5-Trimethyl-2-hexene
      II, 128
                                                               I, 409, 532
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Hexahydromesitylene
                                                         C<sub>9</sub>H<sub>7</sub>N
       IV, 772
                                                            Cinnamic nitrile cis and trans.
   Nonaphthene
                                                               1, 1060, 1061
      II, 216
                                                            Ouinoline
                                                               1, 540, 557, 562, 580, 764, 766, 770, 772,
   Butylcyclopentane
      I, 533
                                                                  774, 952, 956, 957, 989, 990, 1067,
   1,3,5-Trimethylcyclohexane
                                                                  1068, 1070, 1073, 1081, 1083, 1140
      1, 104, 118
                                                               11, 682-684, 794-801, 858, 862
    Propylcyclohexane
                                                               III, 1138
       I, 116
                                                               IV, 103, 675, 793
    Isopropylcyclohexane
                                                            Isoquinoline
       I, 116, 542
                                                               1, 557, 580, 584, 976, 1084
C9H20
                                                         C9H7S
    Nonane
                                                            Thianaphtalene
       1, 21, 79, 84, 203, 401, 528, 598
                                                               1,511
       11, 27, 211
                                                         C9H80
       IV, 770
                                                            Cinnamic aldehyde
    Methyl-2-octane
                                                               1, 837, 839, 851, 919, 926, 1006
       II, 211
                                                               II, 468, 508
   2,2,5-Trimethylhexane
      1, 84, 528
                                                         C9H8O2
   Tetramethy 1 methane
                                                            Coumaric acid
      1,79
                                                               II, 239
                                                            Cinnamic acid
C_9H_3N_3
                                                                11, 554, 564, 573, 829-831, 835, 840, 842,
   1,3,5-Tricyanobenzene
                                                                    864, 981, 982, 989, 1049, 1057, 1061,
      I, 581
                                                                    1069, 1075, 1077, 1079-1082, 1090-1094,
C9H602
                                                                    1232, 1233, 1235, 1244, 1250
   Coumarin
                                                                IV, 428
      I, 511, 976, 1025
                                                         C 9H 8O4
      11, 540, 569
                                                            Acetylsalicylic acid, Aspirin
     IV, 813, 817
                                                                II, 992, 996, 1089
                                                                IV, 431
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Ethyl benzoate
C_9H_9N
                                                               1, 389, 480, 488, 757, 830, 834, 835, 837,
   Hydrocinnamic nitrile
      I, 1060
                                                                  879, 887, 897, 914, 937, 1049
                                                               II, 609, 611, 623, 646
   1-Methylindole
      I, 1144
                                                               III, 1107, 1108
                                                               IV, 56
      11, 801
   2-Methylindole
                                                             Benzyl acetate
      I, 1144
                                                                1, 501, 509, 700, 835, 837, 843, 909, 913,
                                                                   986, 1039
C_9H_{10}O
                                                                II, 607, 623
   Hydrocinnamaldehyde
                                                                IV, 56, 706
      I, 919
                                                             Methyl phenyl acetate
   Estragol
                                                                I, 1051
      IV, 18
                                                                11, 608, 647
   Ethyl phenyl ketone, Propiophenone
      1, 501, 846, 871, 973, 1034
                                                             p_Methyl toluate
      II, 504, 531, 565
                                                                II, 648
   p-Methyl acetophenone
                                                         C_9H_{10}O_3
      1, 754, 871, 1021
                                                            Methylanisate
      11, 504, 531, 566
                                                                II, 648
   Cinnamic alcohol
                                                            Methyl mandelate (d) and (1)
       11, 134, 141, 468, 597, 905
                                                               II, 1149, 1150
C 9H1002
                                                            Ethyl salicylate
   Phenyl propionic acid, Hydrocinnamic acid
                                                               II, 162, 449, 617, 916, 918, 940, 1028,
      II, 237, 573, 1049, 1057, 1061, 1077, 1207,
                                                                    1029, 1031, 1169
           1249, 1250
                                                            Ethyl-p-oxybenzoate
      IV, 429
                                                               II, 162, 952, 1001
   Phenoxypropionic acid ?
                                                         C_9H_1,N0 . C_{10}H_{13}N0
       11, 1256
   Phenoxypropionic acid (d) and (1)
                                                            complex (1-Phenylpropionamide (+) +
                                                            1-Phenylbutyramide (_) )
       II, 1254, 1255
                                                            I, 1178
   p-Ethoxybenzoic acid
       II, 1257
   Resacetophenone-4-methyl ether
       I, 1021
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C_9H_1 \approx N_2
C_9H_{13}N
   Ethyl-o-toluidine
                                                                 IV, 89
      I, 1071
   Dimethyl-o-toluidine
                                                          C_{9}H_{12}0
       I, 554, 561, 1065, 1109
       II, 671, 735
   Dimethyl-p-toluidine
       I, 1113
                                                                 II, 444
       II, 670
   Benzylethylamine
       II, 673
   Mesidine
                                                                IV, 712
       II, 828
                                                                 I, 955, 996
C9H140
                                                                 II, 424, 458
    Phorone
                                                                 III, 1082
       I, 846, 868, 869, 1017
                                                                 IV, 9
       11, 495, 518
                                                             Ethyl benzyl ether
    Camphenilone
                                                                 I, 837, 955, 997
       1, 415, 871
                                                             Absito1
C9H1406
    Ethyl diacetylglycerate active
                                                                 II, 1170
       I, 457
                                                          C9H12O2
    Triacetin
                                                             Benzyl glycol
       I, 474
C9H1604
    Ethyl ethylmalonate
                                                                II, 1170, 1171
       I, 886, 906
                                                          C9H12O3
       III, 1106
                                                             Butyl fuorate
    Azelaic acid
                                                                I, 510
       II, 1000, 1219
    Pentylsuccinic acid (d), (1) and rac.
       II, 1222, 1223
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Acetophenylhydrazone
2-Methyl-4-ethylphenol
    II, 444, 736, 1169
2-Methy 1-6-ethy 1phenol
Phenyl propanol, 3-Phenylpropyl alcohol
   II, 104, 141, 142, 336, 425, 428, 430, 597,
       667, 909, 910, 1040, 1131, 1134, 1141
Propyl phenyl ether
   II, 429, 447, 459
   11, 134, 340, 428, 611
Methylethylhydroquinone
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C9H1605
                                                            Butyl valerate
   Ethyl diacetyl glycerate
                                                               1, 473, 736
      I, 457
                                                            Amyl butyrate
      II, 643
                                                               II, 637
C9H180
                                                            Isoamyl butyrate
   1,3,5-Trimethyl cyclohexanol
                                                               1, 424, 425, 757, 851, 898, 987, 1041
      II, 101
                                                               II, 591, 614
   Methyl heptyl ketone, 2-Nonanone
                                                               IV, 56
      I, 392, 414, 456, 485, 692, 856, 864, 967
                                                            Isoamyl isobutyrate
      II, 491
                                                               1, 426, 428, 836, 898, 1042
   Diisobutyl ketone
                                                               11, 592
      I, 734, 847, 864
                                                               IV, 56
      II, 492, 517, 560
                                                        C9H1803
C9H, 802
                                                           Isobutyl carbonate
   Pelargonic acid, Nonanoic acid
                                                              1, 425, 735, 753, 755, 756, 832, 835, 1044
      11, 207, 214, 232, 252, 256, 357, 361, 379,
                                                              II, 597, 617, 639
          460, 550, 630, 633, 642, 853, 861, 865,
                                                              IV, 56
          985, 1005, 1006, 1046, 1053, 1062,
          1063, 1087
                                                        CoHeO
   Methyl caprylate
                                                           Dibutyl carbinol
      1, 393, 697, 859, 884, 889, 890, 899, 901,
                                                              11, 38
         988, 1043
                                                           Nonyl alcohol
      II, 593, 615, 637
                                                               11, 123, 126
      IV, 56
                                                           Ethyldiisopropyl carbinol
  Ethyl heptoate
                                                               11, 1131
      I, 899, 900, 1043
                                                           3,3,5_Trimethyl_n_hexanol
      II, 592, 614, 637,
                                                               IV, 712
     IV, 56
                                                        C9H20O2
  Butyl isovalerate
                                                           Butyl formal
     I, 425, 835, 837, 845, 899, 1042
                                                               IV, 9
     II, 614
                                                           Isobutyl formal
     IV, 56
                                                               IV, 9
  Isobutyl isovalerate
     1, 402, 424, 425, 426, 670, 832, 836, 851,
                                                        C 9H2 003
        899, 1042
                                                           Diethyleneglycol monoamyl ether
     II, 593, 614
                                                               IV, 249
     IV, 56
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```
C 9 H2 0 S4
                                                             \alpha _(3,4_Dichlorphenoxy) propionic acid (d)
                                                              and (1)
                                                                 11, 1264
      11,420
                                                          CoClaHoNO
C9H21N
                                                             Dichloroacetomethylanilide
   Tripropylamine
                                                                 I, 1182
      I, 964
                                                             Dichloroace tobenzy lamide
      IV, 720
                                                                 1, 1183
C9BrH70
                                                          C9C13H2O3
   1-Bromocinnamic aldehyde
                                                             2,4,5. Trichlorphenoxy propionic acid (d) and
       I, 854
                                                             (1)
                                                             II, 1264
C9BrH902
   Ethyl p-bromobenzoate
                                                          C9Cl3H1507
       I, 916
                                                              complex Ethyl tartrate + chloral
                                                                 II, 1116
CaBrH10NO
   p_Bromopropionanilide
                                                          C9H7NO
       I, 1181
                                                             8-0xyquinoline
                                                                 11, 574, 575, 1076, 1077, 1150
CoCIHOO
    1-Chlorocinnamic aldehyde
                                                          C9H7NO2
       I, 854
                                                             Methylphtalimide
                                                                 I, 1138
CoClHoO2
   Ethyl p-chlorobenzoate
                                                          C_9H_8N_2O_4
       I, 916
                                                             4-Pheny1-5-methy1-1,2,3,6-dioxydiazine
                                                                 I, 1203
CoClHoO3
                                                             Phenylmethylfurosane
  \alpha _(4_Chlorphenoxy) propionic acid (d) and (1)
                                                                 I, 1203
       II, 1256, 1263
                                                          C9H8N2O6
CoClHaoNO2
                                                             Ethy1-3,5-dinitrobenzoate
    1-Leucine propyl ether hydrochloride
                                                                I, 1246
       11, 892
                                                          CoHaNaOn
C_{9}C1_{2}H_{8}0_{3}
                                                             \alpha -(2,4-Dinitrophenoxy) propionic acid (1)
   \alpha -(2,4-Dichlorphenoxy) propionic acid (d)
    and (1)
                                                                 II, 1263, 1265
       11, 1263
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C9H11NO2
C9H9NO3
                                                            p-Dimethylaminobenzoic acid
   p-Nitrophenyl allyl ether
                                                               II, 1002, 1249
      I, 1221
   Benzoyl ether of acethydroxalic acid 1 and 2
                                                         C_9H_{10}N_2O_4
                                                            2,4-Dinitromesitylene
                                                               I, 1235
C9H120
   Mesitol
                                                         C 9H100 15
      II, 174, 184, 441, 796, 1169
                                                           α -Thenylsuccinic acid (d)
   p-Isopropylphenol
                                                               11, 1250, 1251, 1271
      II, 1169
                                                           α-Thenylsuccinic acid rac,
   2,3,5-Trimethylphenol
                                                               11, 1251
      11, 708, 784, 793, 797
                                                           α-Thenylsuccinic acid (1)
   3-Methy1-5-ethy1phenol
                                                               II, 1271
      11, 708, 784, 793, 797
                                                         C 9H11NO
   3-Me thy 1-4-e thy 1pheno 1
                                                            p-Dimethylaminobenzaldehyde
      II, 445, 736
                                                               II, 944
   3-Methy1-6-ethy1phenol
                                                            Benzaldoxime ethylether
      II, 445, 736
                                                               II, 1045
   4-Methy1-2-ethy1pheno1
                                                            Acetyl-o-toluidine
      II, 445, 736
                                                               1, 780, 785, 991, 1009
CoHoNOn
                                                               11, 880, 881
   Ethyl nitrobenzoate o and m
                                                            Acetyl-p-toluidine
      I, 1219
                                                               1, 612, 785
   Ethyl nitrobenzoate p
                                                               II, 881, 882
      I, 1219, 1246
                                                            Methylacetanilide
                                                               I, 1174
C9H9N3O6
   Trinitromesitylene
                                                               II, 936
                                                               IV, 123
      I, 639, 646
                                                            Pheny1-2-propionamide (d) and (1)
   N-2,4-Dinitrophenyl-\alpha-alanine (d)
      II, 1265
                                                               I, 1176, 1177
                                                            Propionanilide
I_{s}0_{e}H_{e}O
                                                               I, 1171, 1172
   Ethyl-p-iodobenzoate
      I, 916
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Ethyl anthranilate, Ethyl-o-aminobenzoate C9H15NO I, 940 Ethyl-p-aminobenzoate 1, 1180, 1189 $C_9H_{16}O_4S$ II, 992 Phenylure thane I, 1187 $C_9H_{12}N_20$ Ethylphenylurea 1, 1184 p-Nitrosopropylaniline C9H17N0 I. 1244 C9H12N2O2 p-Nitropropylaniline C9H19NO I, 1244 C9H13NO2 2,4-Dimethyl-5-carbethoxypyrrole 11, 946, 998 C9H13NO4 Pyridine acetate . Acetic acid IV, 140 CoH14 IN Trimethyl phenylammonium iodide IV, 662 $C_9 H_{14} N_{20}$ Methylveronal I, 1160 C 9H140452 1,2-Dithiacycloheptane-3,7-dicarboxylic acid (d) and (1) 11, 1269 I, 1156

Isophorone oxime 11, 1151 Pentylsulfide succinic acid rac. II, 1223 Pentylsulfide succinic acid (d) 11, 1223, 1224, 1240 Pentylsulfide succinic acid (1) 11, 1240 Nonenoic amide cis. and trans. I, 1149, 1152 Pelargonamide I, 1149 CoBrC1HoN0 Chlorobromoacetomethylanilide I, 1182 Chlorobromoacetobenzylamide 1, 1183 CoCl IHoNO Chloroiodoacetomethylanilide I, 1182 Chloroiodoacetobenzylaminde I, 1183 $C_9C1_3H_80_8N$ Phenylvoluntal 1, 1164, 1205 C9H9N3O2S2 Sulfathiazol

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Diethylbenzene ( mixture )
C10H8
                                                                1, 289, 491, 497, 498, 567, 637
   Napthalene
      1, 48, 66, 88, 89, 95, 96, 99, 101, 113,
                                                                II, 128
         121, 122, 123, 146-149, 156, 157, 160,
                                                             Durene
         163, 165, 166, 167, 168, 169, 171-173,
                                                                I, 66, 142, 166, 288
         293-298, 369, 385, 505-511, 576-580,
                                                             Isodurene
         641-648
                                                                I, 166
      II, 135-140, 182-193, 253-256
                                                             Buty Ibenzene
      111, 1055
                                                                1, 67, 116, 127, 284, 490, 491, 564, 634
      IV, 668, 685, 756, 758, 761, 777
                                                                II, 119, 171, 246
                                                                III, 1046
C_{10}D_{8}
                                                             Butylbenzene sec.
   Deuteronaphtalene
                                                                I, 491, 564, 634
      1, 173
                                                                II, 119
C 1 0H 1 0
                                                             Butylbenzene tert.
   Dihydronaphtalene
                                                                I, 491, 634
       I, 122
                                                                II, 119
   1-Methylstyrene
                                                             Methylpropylbenzene 1,2 and 1,4
       II, 181
                                                                I, 118
                                                             1,4-Methyl-isopropylbenzene
C 10H12
                                                                I, 118
    1-Dicyclopentadiene
       1, 103, 104, 606
                                                             Dihydro-1-dicyclopentadiene
   Tetraline, Tetrahydronaphthalene
                                                                I, 103, 104
                                                             Hexahydronaphtalene
       1, 62, 103, 104, 120, 121, 220, 606
                                                                I, 121
       II, 45, 149
                                                         C10H16
       IV, 773
                                                            Tetrahydro-1-dicyclopentadiene
                                                               1, 103, 374
C 1 0 H 1 4
                                                            Pinene ( mixture ) 2+1
    p-Cymene
                                                               I, 124-125, 126, 374
       1, 127, 160, 288, 498, 567, 637
                                                            1-Pinene
       11, 129, 173, 250
       III, 1050
                                                               I, 122, 125, 221, 428, 543, 607, 685
                                                               II, 48, 49, 150, 213
       IV, 776
                                                            2-Pinene
    Diethylbenzene m and p
                                                               1, 123, 125, 126, 221, 428, 543, 607
       1, 637
                                                               11, 49, 150, 218
                                                           Pinene d + 1 I, 124
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Sabinene
    I, 608
 Phellandrene
    I, 608
 Dipentene
    I, 222
 Carvene
    I, 222
 Dihydroanthracene
    I, 122
 Turpentine ( mixture )
    1, 126, 127, 218, 374, 427, 544, 607
    IV, 2
 Turpentine (1)
    I, 126, 218
Turpentine (d)
    I, 126
   II, 50
Camphene d + 1
   I, 85, 122-124, 222, 426, 427, 543, 607
   II, 48, 150, 217, 218
   IV, 1
Limonene ( mixture )
   1, 123, 127, 425, 543, 607
   II, 46, 150, 216
Limonene (1) and (d)
   I, 127
Limonene rac.
   II, 46
1-Terpinene
   I, 84, 127, 221, 426, 607
   II, 47, 150, 217
3_Terpinene
  I, 221, 424, 607
  II, 47, 150, 217
```

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Terpinolene
       I, 127, 425, 543, 608
       11, 47, 150, 217
C 1 0H 1 8
   Decahydronaphtalene, Decaline
      1, 54, 61, 121, 219, 367, 374, 421-423,
         542, 606
      II, 44, 45, 149, 216
      IV, 773
   Decahydronaphtalene cis.
       1, 91, 93, 121
   Decahydronaphtalene trans.
       1, 120, 121
   4-Propyl-1,5-heptadiene
       1, 409, 532, 601
   4,5_Dimethyl-2,5_octadiene
       1, 409, 532, 601
   Menthene
       I, 122, 221, 425, 606
       11, 46, 150
C10H20
   Butylcyclohexane
       I, 116
    sec.Butylcyclohexane
       I, 420, 542, 605
       II, 43
    tert.Butylcyclohexane
       I, 104
    1,2 and 1,4-Methylpropylcyclohexane
       1, 118, 542
    1 \hbox{--} Methyl-4 \hbox{--} is opropylcyclohexane} \\
       1, 118
    4,5,5_Trimethylheptene
```

I, 601 1-Decene I,532

```
C10ClH7
C10H22
                                                             1-Chloronaphtalene
   Decane
                                                                I, 292, 297, 353, 759, 800, 809
      1, 22, 23, 50, 51, 69, 79, 84, 203, 355,
                                                                11, 340, 352, 353, 379
         401, 528, 529, 598, 599
                                                                111, 1067
      11, 27, 148, 211
                                                             2_Chloronaphtalene
      IV, 1, 685, 727, 770
                                                                1, 297, 298, 353, 778
   Diisoamyl
                                                                11, 353
      1, .57, 85, 203, 204, 402, 529, 599
                                                                III, 1068
      11, 27, 28, 148, 211
                                                             Chloronaphtalene ( mixture )
      IV, 1
                                                                 I, 284, 312, 759
   Methy Inonane
      I, 529
                                                          C10C1H11
      IV, 770
                                                              1_Chlrotetraline
   Octahydroanthracene
                                                                 1, 261, 312
      I, 608
                                                              1-Chlortetrahydronaphtalene
                                                                 1, 320, 749
C10BrH2
                                                                 II, 327
   1_Bromonaphtalene
        1, 190, 200, 298, 324, 759, 800
                                                          C_{10}C1H_{17}
        II, 340, 353, 354, 379
                                                              Bornyl chloride, Pinene hydrochloride
   2-Bromonaphtalene
                                                                 1, 222, 320, 339, 749, 795, 796
        I, 298, 353
                                                                 11, 326, 327, 347
        II, 341, 354, 379
                                                           C10Cl2H16
   Bromonaphtalene ( mixture )
                                                              2,6-Dichlorocamphane
        I, 283, 822
                                                                 I, 339
        II, 341
                                                           C10FH7
C<sub>10</sub>BrH<sub>17</sub>
                                                              1 and 2-Fluoronaphtalene
   Bornylbromide
                                                                  1, 297, 353
       I, 339
    Isoborny lbromide
                                                           C10H8N2
       1, 339
                                                              3,3-Dipyridy1
                                                                  I, 1140
C10Br2H16
    2,6-Dibromocamphane
       I, 339
```

C10H10N2

1,5-Naphthylenediamine

11, 774

C₁₀H₈0 1-Naphthol II, 177, 180, 187, 196, 352, 353, 439, 445, 450, 508, 525, 527, 530, 531, 534, 536, 537, 540, 541, 619, 624, 714, 733, 734, 739, 742, 747, 756, 765, 770, 790, 800, 804, 805, 811, 812, 918, 925, 930, 933, 938, 940, 943, 954, 1016, 1024, 1030, 1032, 1041, 1044, 1093, 1094, 1162, 1171, 1172, 1175, 1177, 1182 IV, 341, 758, 795 2-Naphthol II, 163, 177, 181, 188,194, 196, 353, 445, 450, 508, 517, 525, 528, 534, 536, 537, 540, 542, 543, 619, 620, 624, 714, 734, 739, 743, 748, 756, 766, 770, 771, 790, 801, 804, 805, 812, 918, 925, 930, 933, 937, 938, 940, 943, 954-956, 960, 963-965, 1024, 1032, 1039, 1041, 1044, 1094, 1159, 1162, 1164, 1171, 1172, 1174, 1175, 1177, 1181, 1182 IV, 341, 676, 795

17, 341, 777, 795

C₁₀H₈O₂

1,4-Dioxynaphthalene
 II, 739, 743, 766, 771, 930, 933

1,5-Dioxynaphthalene
 766, 772, 933

1,6-Dioxynaphthalene
 II, 739, 743, 748, 766, 772, 931, 933

1,8-Dioxynaphthalene
 II, 739, 743, 749, 767, 772, 934

```
2,3-Dioxynaphthalene
       II, 739, 743, 749, 767, 773, 931, 934
    2,6-Dioxynaphthalene
       11, 740, 744, 748, 767, 772, 931, 934
    2,7_Dioxynaphthalene
       11, 740, 743, 748, 767, 774, 934
C_{10}H_9N
   1-Naphthylamine
      1, 569, 571, 578, 581, 582, 778, 940, 957,
         973, 976, 1071, 1072, 1080, 1129-1131
      II, 676, 677, 761-767, 839, 840
      III, 1129
      IV, 674
   2-Naphthylamine
      1, 569, 571, 579, 581, 778, 970, 973, 975,
         976, 977, 978, 979, 1072, 1079, 1080,
         1131-1134
      II, 677, 767-774, 841, 842
      III, 1129, 1130
      IV, 675
   Quinaldine
      I, 1081
      II, 684, 801
C_{10}H_9N_3
   2,2'-Dipyridylamine
      II, 858
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C_{10}H_{11}N
C10H100
                                                             n, l-Dimethylindole
   Benzalacetone cis. and trans.
                                                                1, 1144
      I, 872
   Benzalacetone, 4-Phenyl-3-butene-2-one
                                                         C10H120
      1, 919, 973
      II, 535, 536
                                                                11, 516, 1117
                                                             Anethole
C10H1002
   Safrole
                                                                II, 428, 447, 458
      1, 759, 837, 839, 957, 999
                                                                IV, 9
      II, 430, 449, 460
                                                             Isoane thole
      IV, 9
                                                                I, 996
   Isosafrole
                                                                II, 428
      I, 839
                                                             Benzy lacetone
      II, 430, 449, 460, 957, 1000
                                                                I, 872
      IV, 9
   Methylcinnamate
                                                         C10H1202
      1, 610, 648, 759, 839, 914, 1051
                                                             Eugenol
      IV, 56
   Methylbenzylglyoxal enol and ketone
      II, 505
                                                             Isoeugenol
C_{10}H_{10}O_{3}
                                                             Ethyl phenylacetate
   p-Methoxycinnamic acid
      11, 997, 998, 1082, 1250, 1257
CioHioOu
                                                                111, 1108
   Dimethyl phthalate, Methyl phthalate
                                                                IV, 56
      1, 489, 503, 515, 759, 840, 888, 907, 920
                                                             Propyl benzoate
      11, 610, 624
                                                                I, 869, 909, 1049
   Methyl terephthalate
      II, 649
                                                                IV, 56
   Salacetol
      11, 953
                                                                II, 1249
   Acetylmandelic acid (d) and (1)
                                                             Methyleugenyl ether
      11, 1254
                                                                II, 459
                                                                II, 459
```

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ar-Tetrahydro-2-naphthol
   1, 446, 679, 837, 926, 956, 996
   11, 174, 382, 447, 448, 449, 526, 724, 801,
       916, 952, 1026, 1037, 1087, 1173
   11, 177, 352, 1087, 1173
   1, 481, 871, 896, 914, 1051
   II, 608, 623, 648
   II, 611, 624, 646
4-Isopropylbenzoic acid
Methylisoeugenyl ether
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Tetralindiol trans (d) and (1)
                                                            Thymol
                                                               11, 148, 160, 170, 173, 184, 185, 346, 352,
        II, 1145
                                                                   382, 443, 447, 512, 518, 525, 526, 528,
    Tetralindiol cis.-trans.
                                                                   529, 531, 532, 614, 617, 618, 621-624,
        II, 1145
                                                                   709, 715, 721, 731, 738, 750, 752, 754,
    Tetralindiol rac. trans.
                                                                   763, 769, 776, 785, 796, 801, 802, 807,
        11, 1145
                                                                   916, 923, 935, 940, 941, 944, 951, 958,
    Tetralindiol rac. cis.
                                                                   959, 1015, 1023, 1025, 1026, 1028,
        11, 1145
                                                                   1038, 1040, 1083, 1160, 1169, 1170
C10H12O3
                                                               IV, 341, 743, 820
  \alpha -Phenoxybutyric acid (d) and (1)
                                                            Carvone
       11, 1256
                                                               I, 869, 1017
   Anisalpropionic acid
                                                               11, 503, 528
      11, 1257
                                                            Butyl phenyl ether
   Ethyl anisate
                                                               1, 996
      11, 610
                                                               II, 447
   Ethyl mandelate (d) and (1)
      II, 1150
                                                         C10H1402
                                                            Diethylresorcinol
C_{10}H_{14}N_{2}
                                                               II, 149
   Anabasine
                                                            Diethy lhydroquinone
      11, 858
                                                                II, 1170, 1171
   Nicotine
                                                            Diethyl resorcinol ether
      1, 558, 772, 952, 965, 1067, 1072, 1081,
                                                                1, 838, 998
         1082, 1141, 1142
                                                               II, 425, 448
      II, 684-687, 802, 862
                                                               IV, 9
      IV, 91, 104-109
                                                            Butyl benzoate
   Dimethyl-1,2,3,4-tetrahydroquinolaxaline 2,6
                                                                I, 851
   and 2,7
      I, 1083
                                                         C, oH, 403
                                                            Camphoric anhydride (1)
C, 0H, 40
                                                                1, 878
   Carvacrol
                                                            Camphoric anhydride (d)
      II, 146, 518, 525, 526, 528, 621-624, 709,
                                                                1, 869, 878
          721, 796, 801, 916, 940, 962, 970,
           1028, 1038, 1040, 1083, 1160
                                                         C_{10}H_{14}O_{4}
                                                            Ethylphthalate
                                                                IV, 56
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Carvenone
C10H1406
                                                               1, 1017
   Dimethyl dimethoxysuccinate
                                                               II, 528
      I,
   Ethyl acetyl malate
                                                        C10H1602
      I, 913
                                                           2-Keto-cineole
                                                               II, 542
C10H1408
   Methyl acetylene tetra carbonate
                                                        C10H1604
      1, 989, 910
                                                           1,4-Cyclohexanediol diacetate trans, and cis.
   Methyl diacetyl tartrate (d) and (1)
                                                               I. 907
      1, 913
                                                            1,4-Cyclohexanediol diacetate ( mixture )
C_{10}H_{15}N
                                                               I, 473
   N,N'-Diethyl aniline
                                                            Camphoric acid (d)
       1, 554, 938, 954, 955, 1064, 1069, 1106,
                                                               II, 994, 1051, 1060, 1243
          1107
                                                           Camphoric acid (1)
       II, 790
                                                               II, 1243
                                                            Isocamphoric acid (d) and (1)
C10H160
                                                               II, 1243
    Camphor
       1, 406, 415, 427, 460-463, 486, 507, 508,
                                                         C10H180
          512, 693, 694, 715, 728, 729, 749, 752,
                                                             1-Terpineol
          754-755, 758, 827, 847, 851, 852, 857,
                                                                11, 139, 425, 426, 599, 600, 602, 607,
          858, 869, 870, 933, 970, 1018-1020
                                                                    608, 667, 903, 908, 909, 1039, 1134,
       II, 497-501, 518-525, 560-564
                                                                    1144
       IV, 751, 752, 759, 786, 787, 801, 808, 814
                                                             2-Terpineol
    Fenchone
                                                                II, 133, 421, 903, 908, 1039, 1134
       1, 415, 668, 751, 827, 834, 868, 869, 871,
                                                            Menthone
                                                                I, 868, 871
       11, 502, 526-528, 560
                                                                II, 496, 518
       IV, 787
                                                            Geraniol
    Menthenone
                                                                11, 336, 503, 504, 597, 608, 908, 910,
       I, 839
                                                                    1038, 1134, 1137, 1143
       II, 525, 526
                                                            Borneol
    Pulegone
                                                                II, 48, 102, 116, 133, 139, 293, 327, 336,
       I, 869, 1017
                                                                    339, 382, 408, 421, 425, 430, 486,
       11, 503, 526
                                                                   500, 501, 503, 585, 599, 607-609, 667,
                                                                   887, 903, 908, 1039, 1074, 1107, 1117,
                                                                    1134, 1144
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Methoxy isochavibetol benzoate
   Borneol (d) and (1)
                                                              1, 915
      11, 503, 1144
                                                          Butyl oxalate
   Borneol rac.
                                                              1, 885, 906
      11, 503
                                                          Propyl succinate
   Fenchyl alcohol
                                                              I, 839
      11, 502, 505, 1144, 1145
                                                              II, 621, 642
   Terpineol
                                                          Ethyl adipate
      II, 129, 430, 436, 609
                                                              I, 886, 907
   Linalool
      II, 504, 593, 597, 599, 605, 607, 608, 664,
                                                       C10H1805
          665, 667, 876, 1134, 1139
                                                          Tetramethy1-3-mannonelactone
      IV, 280
                                                              1, 680, 844
   Cineole
                                                       C10H1806
      1, 498, 670, 753, 757, 835, 954, 995
                                                          Propyl tartrate
      II, 436, 442-447, 457
                                                              11, 99, 307, 682, 1127
      IV, 18
                                                          Diethyl dimethoxysuccinate
   Citronellal
                                                              I, 479
      I, 851, 1006
                                                          Tetramethy 1-3-mannonolactone
      II, 466, 507, 544
                                                              I, 458
   Campholic aldehyde
      I, 412, 680
                                                       C10H19N
                                                          Caprinitrile
C10H18O3
                                                              1, 518, 534, 545, 760, 766, 948, 961, 965,
   Ethyl ( diethyl ) acetoacetate
                                                                980, 984, 1054, 1088
      I, 478, 990
                                                             II, 692
      11, 604
                                                       CloHao0
C10H180h
                                                          Menthol
   Sebacic acid
                                                              II, 102, 133, 139, 140, 274, 307, 336, 339,
      11, 250, 1000, 1219, 1220
                                                                  340, 394, 408, 421, 496, 501, 595, 600,
   Hexylsuccinic acid (d)
                                                                  607, 608, 667, 670, 671, 673, 690, 876,
      II, 1221, 1223, 1224
                                                                  877, 880, 886-890, 903, 904, 905, 908,
   Hexylsuccinic acid (1) and rac.
                                                                  909, 1037, 1038, 1074, 1117, 1134,
      II, 1223
                                                                  1143, 1145
   Methyl suberate
                                                          Citronellol
      I, 911
                                                             II, 133, 139, 430, 504, 597, 600, 671, 908,
                                                                  1038, 1134
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C10H2004
C_{10}H_{20}O_{2}
                                                            Diethylene glycol monobutyl ether acetate,
  Caprinic acid
                                                             Butoxydiglycol acetate
      II, 208, 214, 232, 244, 247, 252, 357, 361,
                                                                I, 914
          365, 374, 379, 460, 461, 546, 550, 556,
                                                                II, 643
          630, 634, 640, 854, 861, 866, 1005,
                                                                IV, 59
          1006, 1010, 1046, 1053, 1062, 1063,
          1186, 1191, 1192
                                                         C19H220
                                                            Decanol
  Methyl nonanoate, Methyl pelargonate
                                                                11, 270, 291, 488, 1025, 1102, 1121, 1123,
      I, 901, 1043
                                                                    1131
      11, 593
                                                             Amyl ether
      IV, 56
                                                                1, 390, 444, 750, 832, 953, 994
   Ethyl caprylate
                                                                II, 411, 440, 455
      I, 900, 901, 1043
                                                                IV, 8
      11, 593, 615
                                                             Isoamyl ether
      IV, 56
                                                                1, 426, 670, 740, 753, 832, 833, 953, 994
   Butyl caproate
                                                                II, 411, 440, 455
      I, 900
                                                                IV, 8, 655, 704, 705
   Amyl valerate
      I, 473
                                                          C_{10}H_{22}O_{2}
      IV, 59
                                                             Dibutylacetal
   Isoamyl isovalerate
                                                                II, 414
      1, 753, 834, 899, 987, 1043
                                                                IV, 9
      11, 593, 614, 637
                                                             Diisobutylacetal
      IV, 56
                                                                IV, 9
   Octyl acetate
                                                          C10H22O3
      1, 472, 892, 936
                                                             Diethyleneglycol monohexyl ether
      IV, 706
                                                                Iv, 249
   Terpin, Terpinol
                                                             Terpin hydrate
      II, 1144
                                                                II, 1039, 1144
      IV, 280
                                                          C 1 0 H 2 2 O 5
C10H2003
                                                             Tetraethylene glycol dimethyl ether
   Dipropoxy_3_butanone
                                                                  I, 678
      IV, 53
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C10H2207
                                                          C10BrH16NO3
   Dipentaerythritol
                                                             1-Bromocamphor-sulfonamide (d) and (1)
       II, 1138
                                                                I, 1169
C_{10}H_{22}S
                                                          C_{10}Br_2H_{14}O
   Amyl sulfide
                                                             1,1'-Dibromocamphor (d)
      I, 447
                                                                I, 465
   Isoamyl sulfide
                                                             1,2-Dibromocamphor (d), 1',2-Dibromocamphor(d)
      1, 501, 757, 835, 837, 847, 1005
      11, 441, 456
                                                          C10C1H9O4
CioHasN
                                                             Diacetylmonochlorohydroquinol
   Decylamine
                                                                I, 916
      1, 519, 535, 547, 761, 767, 949, 963, 966,
                                                          C10ClH10N
         981, 985, 1056
                                                             α -Naphthylamine hydrochloride
      II, 650
                                                                11, 700
C10BrH8N
                                                          C10C1H15N2
   1-Brom-2-Naphtylamine, 1-Brom-4-Naphthylamine
                                                             Anabasine hydrochloride
      II, 774
                                                                11, 700, 893
C10BrH904
                                                             Nicotine hydrochloride
   {\tt Diacetyl monobromohyd roquino 1}
                                                                IV, 147
      1, 916
                                                          C10C1H150
C10BrH150
                                                             1-Chlorocamphor (d)
   1-Bromocamphor
                                                                I, 463, 715, 874
      I, 463, 464, 508, 715, 875, 1020
                                                                 II, 503
   1-Bromocamphor (d) and (1)
                                                             1-Chlorocamphor (1)
      I, 874
                                                                 1,874
   2-Bromocamphor
                                                             Chlorocamphor rac.
      I, 464
                                                                 1, 874
   2-Bromocamphor (d)
                                                          CioClHaoNO
      1, 465, 858, 868, 870, 871, 874
                                                             Lupinine hydrochloride
      11, 503, 543
                                                                II, 1117
   2-Bromocamphor (1)
      I, 874
   2-Bromocamphor rac.
     I, 874
     II, 874
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C_{10}H_8N_20_2
C_{10}C1H_{24}N
                                                            Furfuralazine
   Decylammonium chloride
                                                               I, 1202
      II, 697
      IV, 143
                                                         C10H8N2S2
                                                            Thiophenalazine
C10Cl2H1003
                                                               I, 1202
   \alpha-( 2,4-Dichlorphenoxy ) butyric acid (d) and
   (1)
                                                         C_{10}H_80_3S
      II, 1264
                                                            Naphthalene-p-sulfonic acid
                                                               IV, 436
C10Cl2H11NO
   Dichloroacetoethylanilide
                                                         C10H9N0
      I, 1183
                                                             1; 4 and 6-Methylcarbostyril
C10C13H1708
                                                               I, 1202
   Complex chloral with ethyl tartrate
                                                         C10H9NO4
      II, 418
                                                            5-Nitrohydrindene-2-carboxylic acid (d) and 1
C10H5N306
                                                               11, 1265
   1,2,5 and 1,4,5-Trinitronaphthalene
                                                         C10H10N20
      I, 1239
                                                            Phenylmethyl pyrazolone
   1,3,5 and 1,3,8-Trinitronaphthalene
                                                               11, 948, 998
      I, 1238, 1239
                                                         C10H10N2O5
C10H6N2Ou
                                                            4-Methoxyphenyl-5-methyl-1,2,3,6-dioxdiazine
   1,5 and 1,8-Dinitronaphthalene
                                                            peroxide
      1, 1238
                                                                I, 1203
      II, 972
                                                            p-Methoxyphenylmethylfurosane
C10H2NO2
                                                               I, 1203
    1-Nitronaphthalene
                                                         C10H11NO2
                                                            Acetoacetanilide
       1, 600, 648, 941, 1011, 1020, 1124, 1125,
                                                               1, 606, 634, 637, 639, 649
          1126, 1131, 1163, 1215, 1217, 1221,
          1236, 1238
                                                         C_{10}H_{12}N_{2}O_{3}
       II, 912, 971, 972
                                                            Dially Imalony lurea
       111, 1157
                                                               1, 1160
   Nitronaphthalene ( mixture )
       II, 912
```

 $C_{10}H_{12}N_{2}S$ Ally lpheny lthiourea 1, 617, 630, 780, 798, 1003, 1027, 1093, 1102, 1106, 1108, 1110, 1162, 1167, 1168, 1198 II, 887, 944, 1004 C10H12N406 2,3,4 and 3,4,6-Trinitrodiethylaniline I, 1243 C 1 0 H 1 3 NO o and p-Ethylacetanilide 1, 1174 1-Phenylbutyramide (d) and (1) 1, 1176, 1177, 1178 1-Phenylbutyramide rac. I, 1178 C10H13NO2 Phenacetine 1, 1053, 1154, 1161, 1170, 1172, 1190 II, 887, 947, 1001 C 10H 13 NO 3 2,4-Dimethyl-3-aldehyde-5-carbethoxy pyrrole II, 946 2,5-Dimethy1-3-carbethoxy-4-aldehyde pyrrole II, 947, 999 2,4-Dimethy1-5-carbethoxy-3-aldehyde pyrrole 11, 947, 998, 999 C10H14N20 p_Nitrosodiethylaniline I, 1243

p_Aminoethyl-acetanilide 1, 634, 637, 639, 649 C10H14N2O2 p-Nitrodiethylaniline I, 1243 $C_{10}H_{14}N_{2}S$ Allyl phenyl thiourea I, 1092 C10H14N3O7 Diethylammonium picrate II, 969 $C_{10}H_{14}N_{4}O_{5}$ 2,4-Dinitro-3-ethoxyaminodomethylaniline I, 1245 C10H1LNLO6 2,4-Dinitro-diethoxy-m-phenylenediamine I, 1245 C10H14N407 Diethylammonium picrate I, 1257, 1258 C10H15N2 Anabasine hydroiodide II, 700 C 1 0H 15 NO Ethylphenylethanolamine II, 130 Carvoxime (1) 11, 46, 1151 Carvoxime (r) 11, 46 Carvoxime (d) 11, 1151

```
C<sub>10</sub>H<sub>19</sub>NO
C10H15NO2
                                                              Decenoic amide cis. and trans.
   Ethyl-2,3,5-Trimethylpyrrole-4-carbonate
                                                                 I, 1152
      I, 1164
                                                              3,3,5,-Tetramethyl-l-cyclohexanone oxime
                                                                 II, 1151
C, OH, NOL
   Aniline acetate . Acetic acid
                                                          C10H19N30
      IV, 140
                                                             1-Butylcyclopentanone semicarbazone
                                                                I, 1169
C10H16N2O3
   Dipropylmalonylurea
                                                          C10H21NO
      I, 1158
                                                             Caprinamide
                                                                1, 602, 608, 783, 1007, 1013, 1036, 1086,
C10H16N6019
   Dipentaery thrite-hexanitrate
                                                                II, 872
      1, 1213
                                                          C10H21NO2
C10H17N0
                                                             Coniine acetate
   Camphoroxime (d)
                                                                I, 613
      11, 51, 1045, 1151
                                                                IV, 147
   Camphoroxime (1)
      II, 1151
                                                          C10BrClH11NO
   Camphoroxime rac.
                                                             Chlorobromoacetoethylanilide
      II, 51
                                                                I, 1183
C10H17NO2
                                                          CioClIN, NO
   Ethyl methyl phenylcinchoninate
                                                             Chloroiodoacetoethylanilide
                                                                I, 1183
   2,4-Dioxo-3,3-diethy1-5-methy1piperidine (d)
   and (1)
                                                          C10ClH1302S
      I, 1202
                                                             Chlorocamphor sulfoxide (d) and (1)
                                                                I, 875
C 1 0H17NO3
   1-Camphoramide
                                                          C10C1H16NO3S
      I, 1018, 1149
                                                             1-Chlorocamphor sulfonamide (d) and (1)
                                                                1, 1169
C10H17N30
   1-Butylcyclopentenone semicarbazone
                                                          C_{10}C1_3H_{10}N0_8
      1, 1169
                                                             Methylphenylvoluntal
                                                                I, 1164, 1204
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1041

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C10H15N02S
   p-Cymene sulfonamide-1 and -2
      I, 1199
C10H21NO2S
   N-Cyclohexylbutane sulfamide-1 and -2
      I, 1169
C. OH23 IN204
   Betaine basic hydroiodide
      IV, 149
C, oBrClH, 403S
   Bromocamphor sulfochloride (d) and (1)
       1, 875
C11H10
    1-Methylnaphthalene
       1, 173, 369, 511, 580, 648, 649
       11, 141, 193, 256
       IV, 731
    2-Methylnaphthalene
       1, 173, 298, 369, 511, 512, 580, 649
       II, 142, 193, 194, 256
C, , H, 6
    Amy lbenzene
       I, 116
    Isoamylbenzene
       I, 116
       III, 1046
    sec.Amvlbenzene
       1, 491, 564, 634, 635
       11, 120
    tert.Amylbenzene
        1, 158, 635
```

```
C11H16
   Pentamethylbenzene
      I, 119
   Methyl diethyl benzene
      I, 491, 498, 501, 568, 638
      11, 129, 173
   Ethyl isopropyl benzene
      I, 498, 567, 637
      11, 130, 174
   Methylhexahydronaphthalene
      I, 121
C, , H20
   4-Allyl-2-octene
      I, 409, 532, 601
   4-Cyclohexyl-2-pentene
      I, 420, 542
   1-Methyldecahydronaphthalene
      1, 114, 117, 119-120
   2-Methyldecahydronaphthalene
      I, 117, 119
C11H22
   Amylcyclohexane
      1, 116, 542
   Isoamylcyclohexane
      I, 116, 542
   tert.Amylcyclohexane
      I, 605
   1,2,3,4,5-Pentamethylcyclohexane
      I, 119
C, 1H24
   Undecane
      I, 529
      II, 28, 211
```

IV, 770

```
C,,H,o0
   Methyl-2-naphthylether, \beta-Naphthyl methyl
   ether
      1, 841, 1001, 1002
      II, 448
   1-Methoxynaphthalene
      I, 919
C,,H,002
   Cinnamenylacrylic acid
      II, 1257
C_{11}H_{12}N_{4}
   Tetracyanohep tane
       1, 560, 761, 771, 958, 962, 966, 969, 977,
          988, 1057, 1059, 1060, 1090
       11, 696, 867
C11H1202
   Ethyl cinnamate
       1, 481, 515, 892, 910, 913, 914
       II, 610, 624
       IV, 56
   Methyleugenylether
       II, 426
   Methylisoeugenylether
       II, 426
C11H12O3
   Ethyl-1-oxymethylene phenylacetate
       I, 697
       II, 612
    Ethyl-2-oxymethyylene phenylacetate
       II, 612
    Ethoxycinnamic acid
       II, 1257
```

```
C11H12O4
   Propionylmandelic acid (d) and (1)
      II, 1254
   Benzylsuccinic acid (d)
      II, 1250
   Benzylsuccinic acid (1)
      11, 1250, 1251
   Benzylsuccinic acid rac.
      II, 1251
C11H1402
   Methyl eugenol ether
      1, 502, 839, 957, 1000
      IV, 9
   Iso eugenol methyl ether
      I, 1000
      IV, 9
   Ethyl phenyl propionate
      I, 914, 1051
      II, 608
   Butyl benzoate
      I, 851, 1049
      11, 611, 647
      IV, 56
   Isobutylbenzoate
       I, 512, 914, 1050
       II, 611, 624, 647
       IV, 56
C,1H,403
    Thymotic acid
       II, 239
   \alpha -Phnoxyvaleric acid (d) and (1)
       II, 1256
```

```
\beta = 0xy + \beta = phenylpivalic acid (d) and (1)
                                                             Butyl malonate
      11, 1257
                                                                I, 885, 906
                                                             Methyl azelate
C11H160
                                                                I, 886, 906, 911
   Methyl thymol ether
      1, 838, 955, 997
                                                          C_{11}H_{22}O_{2}
      11, 426, 447, 459
                                                             Undecanoic acid, Undecylic acid
   tert.Amyl phenol
                                                                II, 214, 232, 357, 362, 550, 556, 630, 634,
      II, 175, 796, 801, 1161
                                                                     866, 1006, 1046, 1053, 1062, 1063,
                                                                    1186, 1191, 1192
C11H1602
                                                             Nonyl acetate
   Oxymethylene camphor
                                                                 1,893
      I, 694
      II, 501
                                                             Ethyl nonanoate, Ethyl pelargonate
                                                                 I, 900, 901, 1044
C, 1H, 7N
                                                                 II, 593
   Isoamylaniline
                                                                 IV, 56
      1, 568, 957
                                                             Butyl heptanoate
      II, 724
                                                                I, 900
C11H180
                                                             Butyl heptanoate
   Methylterpenylether
                                                                I, 900
      II, 421
                                                         C11H22O3
C11H1804
                                                             Isoamyl carbonate
   Methylhydrogencamphorate (d) and (1)
                                                                1, 839, 869, 909, 1044
      II, 1243
                                                                11, 597, 617, 639
C11H200
                                                                IV, 56
   Methyl isobornyl ether
                                                          C_{11}H_{24}O
      1, 834, 954, 995
                                                             Undecyl alcohol
      II, 421, 441
                                                                11, 93, 141, 142
      IV. 9
   Terpinyl methyl ether
                                                          C_{1}, H_{24}O_{2}
      I, 835, 954, 995
                                                             Isoamyl methylal, Isoamyl formal
      II, 441, 457
                                                                1, 755, 834, 954, 994
                                                                IV, 0
C,1H2004
                                                             Amyl formal
   1,11-Undecanedioic acid
                                                                IV, 9
       II, 1219, 1220
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C_{11}H_{13}O_{4}N
C_{11}BrH_{15}O_{2}
                                                             Benzylamino succinic acid (d) and (1)
   Formyl bromocamphor
                                                                 II, 1258
      1, 701
      II, 504
                                                          C_{11}H_{14}N_{2}0
                                                             Cytisine
C11ClH26N
                                                                I, 780
   Undecylammonium chloride
                                                                11, 891, 892
      II, 697
                                                                IV, 126
C11H1002S2
                                                          C11H15N0
   Thenylthienyacetic acid (d)
                                                             Propylphenylacetamide (d) and (1)
      II, 1271
                                                                I, 1175
   Thenylthienylacetic acid (1)
                                                             1-Pheny1-2-valeramide (1)
      II, 1252, 1270, 1271
                                                                I, 1176, 1177
C_{11}H_{11}N0_{2}
                                                             Diethyl benzamide
   Quinoline acetate
                                                                IV, 746
      IV, 140
                                                          C11H15NO2
C11H11NO4
                                                             Isobuty1-p-aminobenzoate
   Ethyl-o-Nitrocinnamate
                                                                1, 1189
      1, 1218
                                                          C11H15NO3
C11H12N20
                                                             Lactophenine
   Antipyrine
                                                                II, 887
      1, 606, 637, 641, 643, 649, 654, 789, 1006,
                                                             2,4-Dimethyl-3-acetyl-5-carbethoxypyrrole
         1018, 1021, 1024, 1025, 1028, 1029,
                                                                II, 947, 948, 999
         1053, 1114, 1120, 1131, 1142, 1154,
                                                          C11H16N2O2
         1157, 1159, 1160, 1161, 1171, 1172,
                                                             o-Nitrobenzyl diethylamine
         1173, 1174, 1180, 1187, 1190, 1203-1205
                                                                I, 646
      II, 888-890, 948-955, 993-996
                                                             m and p-Nitrobenzyl diethylamine
      IV, 125
                                                                I, 647
C11H12N2O6
                                                          C11H16N2O3
   Buty1-3,5-dinitrobenzoate
                                                             Isobutylallyl alonylurea
      I, 1246
                                                                I, 1158
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```
C,,H,aN203
   Isoamylethylmalonylurea
      1, 1160
   (2-Methylbutyl) ethylmalonyl urea
      1, 1160
   (Diethylcarbinyl) ethylmalonyl urea
      1, 1160
   (Propylmethylcarbinyl) ethylmalonyl urea
C11H21NO
   Undecenoic amide trans, and cis.
      I, 1150, 1152
C11H11N302S
   Sulfapyridine
      I, 1199
C, 2HA
   Acenaphthylene
      I, 664
      II. 204
C12H10
   Dipheny1
      1, 77, 123, 142, 143-144, 155, 167, 168,
         289-292, 369, 384, 502, 568, 639-640
      11, 133, 134, 174, 175, 252
      111, 1052
      IV, 776
   Acenaphtene
      1, 158, 172, 174, 175, 177, 300, 514, 515,
         584, 659-664
      II, 145, 201-204, 257
C,2H,2
   1-Ethylnaphthalene
      II, 194
```

```
2,7_Dimethylnaphthalene
      1, 173, 649
C12H16
   Phenylcyclohexane
      1, 367, 639
C12H18
   Diisopropylbenzene
      1, 497, 567, 637
      11, 130, 173, 250
   Triethylbenzene s.
      1, 166, 638, 501, 568
      11, 133, 174, 251
   Triethylbenzene ( mixture )
      1, 501, 568, 639
      II, 133, 174, 251
   Hexamethy I benzene
      1, 95, 289, 639
      II. 133
   Hexylbenzene
      1, 284, 491
C12H22
   Dicyclohexyl
       I, 542
    1,6 and 2,6-Dimethyldecahydronaphthalene
       1, 114, 117, 119, 120
C12H24
    4-Buty1-2-octene
       1, 409, 532
C12H26
    Dodecane
       1, 58, 69, 77, 85, 86, 87, 204, 402, 403,
          529
```

II, 28 IV, 770

C12F27N

```
Dodecanes ( isomers )
      IV, 633
C<sub>12</sub>BrH<sub>9</sub>
   4-Bromodiphenyl, p-Bromodiphenyl
      I, 290, 352
   3_Bromodiphenyl
      I, 300, 353
C12Br2H8
   2,2-Dobromodiphenyl
     I, 291
   4,4-Dibromodiphenyl
     1, 291, 352
C12C1H9
   4-Chlorodiphenyl; p-Chlorodiphenyl
      1, 290, 352
   3_Ch1roacenaphtene
      1, 300, 353
C12ClH25
   1-Chlrododecane, Dodecyl chloride
      1, 187, 311, 318, 741
      II, 321
C12Cl2H8
   2,2-Dichlorodiphenyl
      I, 291
   4,4-Dichlorodiphenyl; p,p-Dichlorodiphenyl
      I, 291, 292, 778
C12FH9
   2,3 and 4-Fluorodiphenyl
      I, 290
C12F2H8
   4,4-Difluorodiphenyl
      1, 291, 352
```

```
Heptacosafluortributylamine
       I, 523, 527, 541, 771
C12H6012
   Mellitic acid
       IV, 426
C12H8I2
   2,2-Diiododophenyl
       I, 291
   4,4-Diiododopyenyl
       I, 292
C12Ha0
   Diphenylenoxide
       I, 513, 841
   Dibenzofurane
       I, 959
C18HgO2
   Diphenylene dioxide
       1, 841, 959, 1001
C<sub>12</sub>H<sub>8</sub>Se
   Diphenylene selenide
       I, 841, 848
C<sub>12</sub>H<sub>8</sub>Se<sub>2</sub>
   Diphenylene diselenide
       I, 841, 848
C12H8S
   Diphenylene sulfide
       1, 514, 848
C12H8S2
    Thianthrene
       I, 447, 1001, 1052
   Diphenylene disulfide
      I, 841, 848
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```
C<sub>12</sub>H<sub>9</sub>I
   3_lodoacenaphtene
       I, 300, 353
   p-Iodobiphenyl
       I, 758, 778, 800
       II, 340, 352
C<sub>12</sub>H<sub>9</sub>N
   Carbazole
       1, 582, 583, 584, 585, 959, 976, 1142,
          1143, 1083
       II, 802-804
C12H9N3O7
   Benzene picrate
C12H10I4
   Diphenyliodinium_triiodide
      IV, 676
C12H10N2
   Azobenzene
      1, 546, 572-575, 577, 578, 584, 952, 957,
          958, 973-975, 989, 1072, 1075, 1076,
          1078, 1079, 1126
      II, 1115
      IV, 757, 764
C12H100
   Diphenylether: Diphenyl oxide
      1, 503, 679, 708, 733, 759, 823, 836, 839,
          840, 919, 957, 997
      II, 41, 44, 48, 414, 428, 448, 460
      IV, 19, 763
  Phenylphenol o and p
      II, 785
  m-Phenylphenol
      II, 786
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```
C12H1002
   Isoamyl benzoate
      1, 914
   1 and 2-Naphthyl acetate
       II, 645
   p-p'-Diphenol, Dioxydiphenyl
       11, 175, 760
   2-Acetyl-1-naphthol
       IV, 811
C12H1003
   p_Dioxydiphenylether
      11, 1173
C_{12}H_{10}S
   Diphenyl sulfide
      1, 840, 847, 849
C_{12}H_{10}S_{2}
   Diphenyl disulfide
      1, 503, 848
C12H10Se
   Diphenyl selenide
      I, 847, 849
C12H10Se2
   Diphenyl diselenide
      I, 848, 849
C<sub>12</sub>H<sub>10</sub>Te
   Diphenyl telluride
      I, 849
C_{12}H_{11}N
   Diphenylamine
      1, 518, 523, 529, 555, 568, 577, 581, 583,
          772, 939, 945, 957, 595, 960, 969, 970,
          972, 974, 975, 976, 977, 978, 979, 980,
          1063, 1065, 1071, 1072, 1073, 1119-1125
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```
II, 674, 675, 753-758, 836-838
                                                         C12H1602
      IV, 89, 674, 742, 754, 791
                                                            Isoamyl benzoate
C_{12}H_{11}N_{3}
                                                                1, 759, 839, 1050
   p-Aminoazobenzene
                                                                II, 611, 647
      1, 574, 776, 1127
                                                                IV, 56
      11, 761, 864
                                                            Ethyl-a-phenyl butyrate
                                                                I, 914
C_{12}H_{12}N_{2}
   Benzidine
                                                         C12H1603
      1, 543, 564, 566, 567, 568, 569, 580, 778,
                                                            \alpha -Phenoxycaproic acid (d) and (1)
         1125
                                                                II, 1256
      II, 760, 761, 838
                                                            Isobutyl mandelate (d) and (1)
      IV, 662, 791
                                                                II, 1150
   Hydrazobenzene
                                                            Isoamyl salicylate
      1, 572, 574, 575, 1075, 1076, 1078
                                                               II, 916, 1029
      11, 687, 809
                                                            Methyl-\alpha-oxy-\alpha-phenylpivalate (d) and (1)
                                                               II, 1141
C12H12O4
   Dimethylglycol phtalate
                                                         C12H17NO
      I, 888, 907
                                                            Butylphenylacetamide (d)
                                                               I, 1175, 1179
C12H13NO
                                                            Butylphenylacetamide (1)
   Phenylammonium phenolate
                                                               I, 1179
      IV, 146
                                                            1-Pheny1-2-capramide (d) and (1)
C12H1404
                                                               I, 1176
   Diethyl phtalate
                                                        C12H18O3
      1, 386, 481, 489, 494, 888, 907, 909, 920,
                                                            Methyl camphocarbonate
                                                               I, 699
      11, 610, 612
                                                               11, 607
   Butyl hydrogenphthalalate (d) and (1)
      II, 1250
                                                        C12H18O6
  β-Phenylethylsuccinic acid (d) and (1)
                                                            Ethyl diacetyl tartrate
      II, 1251
                                                               II, 622
C12H160
                                                        C12H18O8
   Tetramethylphthalane
                                                            Dimethyl dipropionyltartrate (d) and (1)
      II, 540-542, 573
                                                               I, 913
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C12H22O6
   Diethyl diacetyl tartrate (d), Ethyl diacetyl
   tartrate (d)
                                                            Isobutyl tartrate (d)
       1, 487, 509, 510, 699, 729, 913, 1047, 1048
                                                               11, 309, 310, 684, 686, 1141
                                                            Isobutyl tartrate (1)
   Ethyl diacetyl tartrate (1)
                                                               II, 686, 1141
      I, 913
                                                            IsobutyI tartrate rac.
      11, 909
                                                               II, 687
C_{12}H_{20}O_{2}
                                                            Isobutyl mesotartrate
   Bornyl acetate
                                                               II, 687
      I, 871, 896, 1038
                                                             Diethyl diacetyltartrate
      II, 607, 622
                                                                I, 729
      IV, 56
                                                            Dipropyl dimethoxysuccinate
                                                               I, 479
C12H220
                                                               11, 602
   Ethyl bornyl ether
      I, 834, 954, 995
                                                         C_{12}H_{22}O_{11}
      II, 421
                                                            Mannose
   Ethyl isobornyl ether
                                                               IV, 320
      I, 954, 995
                                                            Maltose
      II, 421, 457
                                                               IV, 320, 321
      IV, 9
                                                            Saccharose
                                                               11, 650, 656, 1069, 1141, 1142
C12H22O4
                                                               IV, 291-317, 719, 740
   Isoamyl oxalate
                                                            Lactose
      1, 503, 759, 910, 1045
                                                               II, 1142
      11, 621, 640
                                                               IV, 318-320, 740
   Butyl succinate
      I, 886, 906
                                                         C12H23N
   Methyl sebacate
                                                            Lauronitrile
      I, 911
                                                                1, 518, 534, 545, 760, 767, 948, 961, 965,
   1,12-Dodecanedioic acid
                                                                   980, 984, 1054, 1088
      II, 1000, 1220
                                                                11, 693, 866
                                                            Dicyclohexylamine
                                                                IV, 85
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C12H2604
C12H2402
                                                            Triethyleneglycol monohexyl ether
   Decyl acetate; Caprinyl acetate
                                                               IV, 249
       1,893
   Ethyl caprinate
                                                         C_{12}H_{27}N
      I, 901, 902
                                                            Dodecvlamine
   Lauric acid
                                                               1, 519, 535, 547, 761, 767, 949, 963, 966,
      II, 206, 208, 214, 233, 244, 247, 253, 357,
                                                                  981, 985, 1056
          362, 265, 375, 386, 458, 461, 546, 550,
                                                               11, 650, 651
          556, 566, 630, 634, 856, 866, 977, 985,
                                                               IV, 72
          1005-1007, 1010, 1046, 1053, 1059,
                                                            Triisobutylamine
          1062, 1064, 1066, 1186, 1191-1194
                                                               I, 964
      III, 1217
                                                               II, 655
      IV, 745
                                                         C12Br2H8S
C_{12}H_{24}O_{3}
                                                            Bis (p-Bromophenyl) sulfide
   Dibutoxy_3_butanone
                                                               I, 849
      IV, 53
                                                        C18C1H9N2
   Diisobutoxy_3_butanone
                                                            p-Chloroazobenzene
      IV, 53
                                                               1, 776, 1079
C_{12}H_{25}I
                                                               II, 865
   1-Iodododecane, Dodecyl iodide
                                                        C_{12}C1H_{9}O
      1, 187, 311, 318, 741, 742
                                                            2-Chlor-6-phenylphenol
      II, 321, 322
                                                               11, 384
C12H260
    Lauryl alcohol, Dodecyl alcohol; 1-Dodecanol
                                                         C12C1H28N
                                                            Dodecylammonium chloride; Laurylammonium chlo-
       II, 12, 39, 93, 94, 270, 291, 407, 483,
           488, 582, 587, 690, 897, 1103, 1121,
                                                               1, 615, 764, 771, 785
           1123
                                                               11, 697, 698
C12H2602
                                                               IV, 143
   Domethyl-di-tert . butyl ethyleneglycol sym.
                                                            Tetrapropyl ammonium chloride
      11, 1136
                                                               IV, 143
   Diamylacetal
      IV, 9
                                                         C12C12H12O4
   Diisoamylacetal
                                                            Di-6-chloroethyl phthalate
      IV, 9
                                                               1, 889, 907
```

```
C<sub>12</sub>H<sub>8</sub>0S
    Phenoxthin
        I, 1121
    Phenoxthianine
        I, 841, 960, 1001
 C<sub>12</sub>H<sub>9</sub>NO
    Phenoxazine
        I, 1001, 1203
 C12H9NO2
    o-Nitrobiphenyl
        I, 941
    Ni troacenaphthene
       II, 972
C12H9NS
    Phenothiazine
       I, 1001, 1052, 1203, 1123
C12H10N20
    Azoxybenzene
       I, 1126, 1196
   N-nitrosodiphenylamine
       I, 1179
   p-0xyazobenzene
       II, 761, 865
C12H10N2O3
   2 and 4-Nitroaceto-1-naphthalide
       I, 1257
C12H10N407
   2-Picoline-picrate
      .I, 1257
C12H10OS
   Diphenyl sulfoxide
       I, 848, 877
```

```
C12H100Se
   Diphenyl selenoxide
      I, 877
C12H1002S
   Diphenyl sulfone
      I, 848, 849, 877
   \alpha -( 3-Thianaphtheny1 ) propionic acid
      II, 1266
C12H1002Se
   Diphenyl selenone
      I, 849, 877
C12H10SSe
   Benzene-selenylthiophenolate
      I, 848, 849
C12H12N2O3
   Luminal
      I, 1180
C12H12N8026
   Nitrostarch
      I, 1208
C_{12}H_{12}O_{2}S_{2}
   Di (\alpha-thenyl) acetic acid
      II, 1250, 1271
C12H14N6O22
   Nitrocellulose
      IV, 828
C12H15N3O6
   Ethyl triazine tricarboxylate
      I, 1050, 1128
   2,4,6-Trinitro-1,3-dimethy1-5-tert. buty1ben-
      I, 1236
```

```
C12H16N2O
                                                             C_{12}H_{25}N0
   Methylcytisine
                                                                 Lauramide
       1, 614, 780, 1009
                                                                    1, 602, 608, 783, 1007, 1013, 1031, 1036,
       II, 892
       IV, 126
                                                                    II, 872
C_{12}H_{16}N_{2}O_{4}
                                                             C_{12}H_{26}O_{3}S
                                                                 Dodecylsulfonic acid
   Ethyl-p-diamidoterephthalate
       I, 1198
                                                                    IV, 434, 435
C12H17NO
                                                             ClaHaaNI
   sec. p-Acetoaminobutylbenzene
                                                                 Tributylamine hydriodide
       I, 1189
                                                                    I, 559
   iso. p-Acetoaminobutylbenzene
                                                             C_{12}Br_{2}H_{8}OS
       I, 1189
                                                                 p-Bromophenyl sulfoxide
   2 and 3-Capranilide
                                                                    I, 849, 877
       I, 1174
   1-Phenylcapramide (d)
                                                             C_{12}Br_2H_8O_2S
       I, 1177, 1178
                                                                 p-Bromophenyl sulfone
                                                                    I, 849, 877
C12H17NO2
   Amylphenylcarbamate n (d)
                                                             C12C1H9AsN
       I, 1187
                                                                 10-Chloro-9, 10-dihydrophenarsazine
   Amylphenylcarbamate iso (d)
                                                                    1, 1021, 1073
                                                                    IV, 755
       I, 1187
                                                             C_{12}H_{17}N_{5}0_{4}S_{2}
C_{12}H_{8}N_{2}O_{2}
                                                                 Ulvion
   Nicotine acetate
                                                                    I, 1199
       IV, 148
                                                             C_{12}H_{4}N_{6}O_{12}S
C12H18N2O3
                                                                 Picryl sulfide
   ( Diethylcarbinyl ) allylmalonyl urea
                                                                    1, 1237, 1245
       I, 1161
                                                             C_{12}H_{12}N_{2}O_{2}S
   ( Propylmethylcarbinyl ) allylmalonyl urea
                                                                 4,4'-Diamino-diphenylsulfone
       I, 1161
                                                                    I, 1188
C_{12}H_{12}N_{2}O_{14}
   Ethyl (diimido)-succinylsuccinate
      I, 1198
```

C13H10

Fluorene

I, 151, 158, 160, 165, 166, 172, 173, 175, 176, 177, 178, 299, 513-514, 584-585, 655-657

II, 144, 201, 204, 205, 257

C13H12

Diphenylmethane

I, 144, 168, 292, 369, 503, 569, 640 II, 134, 175-178, 252

III, 1053

C13H14

1-Propylnaphthalene

II, 194

2-Isopropylnaphthalene

II, 143, 194

Isopropylnaphthalene (mixture)

I, 511, 580, 649

II, 195, 257

C13H18

Isopropyltetraline

I, 424, 543, 606

II, 45, 149, 216

CiaHao

Hep tylbenzene

I, 284, 491

Methyldiisopropylbenzene

1, 501, 568, 639

II, 133, 173, 174, 251

C₁₃H₂₄

4-Cyclohexyl-z-heptene

I, 542

C₁₃H₂₈

Tridecane

I, 85, 87

11, 28, 148, 212

C13Cl2H8

9,9-Dichlorofluorene

I, 299

 $C_{13}H_{8}O$

Fluorenone

1, 515, 976, 1024

Fluorenone red and yellow

I, 873

C13H802

Xanthone

I, 1026

 $C_{13}H_9N$

Acridine

1, 582, 583, 957, 973, 1063, 1083, 1144

II, 804, 805

Phenanthridine

I, 1077

C,3H100

Benzophenone

1, 459, 495, 502, 504, 827, 871, 872, 919,

971-973, 1021, 1022

II, 505, 532-534, 566

III, 1090, 1091

IV, 687, 802, 813, 817

1 and 2-Benzophenone

I, 872

```
C13H1002
                                                         C13H1202
   Phenyl benzoate
                                                             p_Dioxyphenylmethane
      I, 510
                                                                II, 1173
      11, 611, 647
                                                            \alpha -( 1-Naphthyl ) propionic acid
   p-0xybenzophenone
                                                                11, 1266
      II, 942
                                                         C_{13}H_{12}O_{3}
                                                            \alpha _( 2-Naphthoxy ) propionic acid (d)
C, 3H, 003
   Difurfurylidene acetone
                                                                II, 1255, 1263, 1264, 1267
      II, 543
                                                            \alpha _( 2-Naphthoxy ) propionic acid (1)
   2,5 and 0,0'-Dioxybenzophenone
                                                                II, 1255, 1264, 1267
                                                            \alpha _( 1_Naphthoxy ) propionic acid (d)
      II, 942
   Phenyl salicylate; Salol
                                                                 II, 1255, 1266, 1267
                                                            \alpha _( 1_Naphthoxy ) propionic acid (1)
      II, 162, 187, 382, 445, 522, 543, 624, 738,
          742, 747, 927, 935, 936, 941, 944, 952,
                                                                 II, 1255, 1266, 1267
           1020, 1036, 1037, 1039, 1089, 1161,
                                                          C13H13N
          1169, 1173, 1174
                                                             Benzylaniline
C13H11N
                                                                 I, 572, 574, 957, 1074, 1075
   Benzalaniline; Benzilidene aniline
                                                                 II, 674
      I, 572, 573, 574, 575, 1074, 1076, 1077,
                                                                 III, 1128
          1118
                                                             Methyldiphenylamine
      II, 674
                                                                 II, 676, 758, 759
C13H12N2
                                                          C_{13}H_{13}N_{3}
   4-Methylazobenzene
                                                             Diphenylguanidine
      I, 1079
                                                                 I, 1140
C13H120
                                                          C_{13}H_{14}O_{14}
   Benzhydrol; Diphenylcarbinol
                                                              Ethyl ( acetyloxymethylene ) phenylacetate
      II, 104, 505, 657, 666, 672, 673, 677,
                                                                 I, 697
           1040-1042
                                                              Ethyl-2-oxymethylene ( ethoxy ) phenylacetate
   Benzyl phenate; Phenyl benzyl ether
                                                                 II, 612
      I, 503, 840, 957
                                                         C13H1406
      II, 428, 460
                                                             Methyl benzylidenetartrate
   2-Methoxybiphenyl
                                                                I, 479, 887
      I, 919
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C13H1802
                                                               C13H28S4
    Benzalcamphoryledone-3-acetone
                                                                      11, 420
        I, 460
C13H1807
                                                               C<sub>13</sub>Br<sub>2</sub>H<sub>9</sub>NO
    Salicin
       IV, 126
                                                                      I, 1188
C 1 3 H 2 2 O 3
                                                               C,aClH,oNO
    Isoamyl carbonate
       1, 1044
                                                                      I, 1183
C13H22O9
                                                               C<sub>13</sub>C1H<sub>3</sub>ON
   Dimethylglutaric acid . dilactic acid (1)
       II, 1225
                                                                      I, 615
                                                                      IV, 143
C_{13}H_{2h}O_{h}
   Methyl 1,9-nonane dicarboxylate
                                                                      11, 698
       1, 911
                                                               C13C12H80
C13H260
   2-Tridecanone; Methyl undecyl ketone
       1, 392, 415, 456, 485, 692, 713, 843, 857,
          864, 968
                                                               C, 3H, 1NO
       II, 491
C_{13}H_{26}O_{2}
   Tridecanoic acid
       II, 214, 233, 357, 362, 550, 556, 630, 634,
                                                                  Benzanilide
           866, 1007, 1046, 1053, 1062, 1064, 1186,
           1194, 1195
   Undecyl acetate
                                                                      III, 1144
      1,893
                                                               C13H11NO2S2
   Ethyl undecanoate
                                                                  o-Nitro-p-methyldiphenyl disulfide
      1, 901, 902
                                                                      1, 1246
   Methyl laurate
      1, 393, 697, 720, 859, 884, 890, 988
      II, 594
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3,5-Dibromo-4-aminobenzophenone
o and p-Chlorobenzanilide
Methyldodecylammonium chloride
Tridecylammonium chloride
4,4_Dichlorobenzophenone
   1, 758, 872, 977
Formyldiphenylamide
   I, 611, 1137, 1179
p-Aminobenzophenone
   I, 637, 649, 1127
  1, 1022, 1053, 1118, 1159, 1170, 1180
  II, 884, 992
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C13H12N20
                                                          C13H15NO4
                                                             Ouinoline acid acetate
    4,4'-Diamino-benzophenone
                                                                 IV, 140
       I, 1188
   Diphenylurea
                                                          C_{13}H_{15}N_{3}0_{2}
       II, 887
                                                             Acetylaminoantipyrine
   Benzene-azo-p-cresol
                                                                 I, 1159, 1205
       II, 943
                                                                 II, 890
C_{13}H_{12}N_{2}0_{2}
                                                          C13H16N2O3
   Anisolazophenol
                                                              Phenol-urea
       II, 941
                                                                  IV, 829
C13H12N2S
                                                          C13H17N30
   Thiocarbanilide
                                                             Pyramidon
      I, 1020
                                                                 I, 1028, 1029, 1128, 1144, 1156, 1157,
                                                                    1159, 1160, 1162, 1173, 1180, 1187,
C13H12N407
                                                                    1190, 1203, 1205, 1206
   2.6 and 2,4-Lutidine picrate
                                                                 II, 891, 955, 996, 997
      I, 1257
                                                                 IV, 125
C13H1202S
   2-Thenylphenylacetic acid (1) and (d)
                                                          C13H19N0
                                                              1-Phenylheptanamide (1)
      II, 1251, 1270, 1271
  \alpha -( 2-Thienyl ) hydrocinnamic acid (d)
                                                                 I, 1178
                                                              Pheny1-2-heptanamide (d) and (1)
      II, 1251, 1252, 1270
  \alpha - ( 2-Thienyl ) hydrocinnamic acid (1)
                                                                 I, 1177
                                                              Amylphenylacetamide (d) and (1)
      II, 1270
                                                                 I, 1175, 1179
  \alpha - 2-Naphthy1thiapropionic acid (d) and (1)
      II, 1266
                                                           C13H20N407
                                                              Heptylammonium picrate
C13H13NO3
                                                                 I, 1257
   Aniline salicylate
      IV, 146
                                                           C13H2206S4
                                                              Ethyl (carbothiolon) lactic acid. Ethyl
C_{13}H_{14}N_{4}0
                                                              ( carbothiolon ) oxybutyric acid
   s-Diphenylcarbazide
                                                                 II, 1242
      I, 1198
```

```
C13H22O8S
   Dimethylglutaric acid (d) . thiodilactic acid
   (1)
      II, 1226
C<sub>13</sub>Br IH<sub>9</sub>NO
   3_Bromo_5_iodo_4_aminobenzophenon
      I, 1188
C13BrH9N2O3
   o, m and p_Bromobenzoyl-p_nitroaniline
   I, 1256
C13C1H9N2O3
   o, m and p_Chlorobenzoyl-p-nitroaniline
   1, 1256
C13C1H21N2O6
   Novocaine perchlorate
       IV, 149
C13H11N02SSe
    o-Nitrobenzylselenyl-p-thiocresylate
       I, 1246
C13H21IN2O2
    Novocaine iodide
       IV, 149
C1hH10
    Tolane
       1, 145, 169, 170, 292, 575
    Phenanthrene
       1, 48, 113, 124, 150, 157, 158, 168, 169,
          170, 171, 173, 174, 175, 176, 299, 385,
          512, 583, 652-654
```

11, 144, 198, 199, 200, 257

IV, 685, 758

```
Anthracene
      1, 96, 122, 150, 168, 171, 173, 174, 175,
         298, 512, 581-582, 649-652
      11, 144, 196, 197, 198
      IV, 668, 685
C14H12
   Stilbene
      1, 95, 169, 170, 504, 573-575, 650
      11, 135, 182
      111, 1052
      IV, 753
C14H14
   Dibenzyl, Diphenylethane sym.
      1, 145, 167, 169, 369, 503, 572, 573, 640
      II, 134, 181, 252
      111, 1053
   p_Ditolyl, p,p_Ditolyl
      1, 292, 569, 640
      11, 175
C14H20
   2,4-Dimethyl-3-benzylidene pentane
      1, 639, 641
C_{14}H_{22}
   Tetraethylbenzene 1,2,3,5+1,2,4,5
      1, 166
   Octylbenzene
      1, 116, 285, 492
C14H28
    Octylcyclohexane
```

I, 116, 542

```
C 1 4 H 3 0
                                                           C14H1002
   Tetradecane
                                                              Benzil
      I, 69, 87, 88, 204, 365
                                                                  1, 459, 460, 486, 503, 504, 507, 514, 694,
      II, 29
                                                                     729, 858, 873, 974, 975, 1022, 1023
      IV, 771
                                                                  II, 505, 506, 535, 566, 567
                                                                  III, 1091
C14BrH29
                                                                 IV, 687
   1-Bromotetradecane, Tetradecyl bromide
      I, 187, 311, 318, 742
                                                           C14H1003
                                                              Benzoic anhydride
C_{14}Br_2H_{10}
                                                                 1, 465, 872, 878, 919, 979, 1028, 1029
   1,2-Dibromodtilbene
                                                                 II, 574, 626
      1, 292
                                                                 IV, 661, 817
C14Br2H20
                                                          C_{14}H_{10}O_{4}
   Dibromotetraethylbenzene ( sym., unsym. vic. )
                                                              Benzoyl superoxide
      I, 352
                                                                 I, 873
C_{14}C1_{4}H_{8}
                                                           C14H1009
   1,1-Dichloro-2,2-di-(4-chlorphenyl) ethylene
                                                              m-Digallic acid
      1, 352
                                                                 II, 1058
C14C15H9
                                                                 IV, 431
   Dichlorodiphenyltrichloroethane, D.D.T.
                                                          C14H11N
      I, 205, 272, 297, 312, 324, 352, 758, 759,
                                                             Methylacridine
          778
                                                                 I, 582, 1083
C14H802
                                                          C14H12N2
   Anthraquinone
                                                             Benzalazine
      1, 827, 1025
                                                                I, 575, 576, 1077, 1128
      IV, 788
                                                          C_{14}H_{12}0
C_{14}H_{8}O_{3}
                                                             p-Acetylbiphenyl
   1-0xyanthraquinone
                                                                I, 975
      II, 943
                                                                II, 568
C_{14}H_{8}O_{4}
   Quinizarin
      II, 943
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C14H1202
                                                            C_{14}H_{14}O_{3}
    Benzyl benzoate
                                                                Dianisyl oxide
       I, 480, 481, 488, 515, 888, 914, 920, 1050
                                                                   I, 840
       II, 610, 647
                                                               \alpha -( 2-Naphthoxy ) butyric acid (d)
    Phenyl anisyl ketone
                                                                   II, 1267, 1268
       II, 568
                                                            C_{14}H_{14}O_{4}
    Benzoin
                                                                Ethylene bis hydroquinone
       II, 134, 140, 506, 675, 687, 688, 884,
                                                                   I, 842
            1075, 1149
                                                            C_{14}H_{14}S
C14H12O3
                                                                Benzyl sulfide
   Diphenylglycolic acid
                                                                   I, 447, 848
       II, 256
   2-0xy-5-methoxybenzophenone
                                                            C_{1} H_{15} N
                                                                Aniline-1-phenylethane
   Benzyl-p-hydroxybenzoate, Benzyl-hydroxyben-
                                                                   II, 676
   zoate
       II, 149, 195
                                                            C_{14}H_{15}N_{3}
                                                                p-Dimethylaminoazobenzene, 6-Amino-3,4-dime-
C_{14}H_{14}N_{2}
                                                                thylazobenzene
   Azotoluene
                                                                   I, 1127, 1128
      I, 574, 1079
                                                                   II, 865
C_{1}H_{1}H_{0}
                                                            C14H16N2
   Dibenzyl ether
                                                                Dibenzylhydrazinz
      II, 429
                                                                   I, 576, 1077, 1078
       IV, 655
                                                            C14H1804
C_{1h}H_{1h}O_{2}
                                                                Propyl phtalate
   Dibenzoylethane s.
                                                                   1, 386, 489, 888, 907
       I, 873
                                                            C_{1} H_{2} O_{2}
  \alpha -1-Naphthyl-methyl propionic acid (d) and (1)
                                                                Amyl hydrocinnamate
       II, 1266
                                                                   I, 896
  \alpha -2-Naphthyl-methyl propionic acid (d) and (1)
      II, 1266
                                                            C14H2208
   Hydrobenzoin
                                                                Ethyl acetylene tetracarbonate
      II, 506, 1149
                                                                   1, 911, 989
   Isohydrobenzoin (d) and (1)
       II, 1149
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```
C14H300
C_{14}H_{23}O_{3}
                                                           Tetradecyl alcohol, 1-Tetradecanol, Myristic
   Benzyl-p-hydoxybenzoate
      II, 173
                                                               II, 12, 39, 94, 270, 291, 408, 483, 488,
C14H2604
                                                                   582, 587, 690, 897, 1025, 1103, 1121
   Methyl 1,10-decanedicarboxylate
                                                         C14H3004
      I, 911
                                                            Triethyleneglycol monooctyl ether
   Butyl adipate
                                                               IV, 249
      I, 886, 907
   Ethyl sebacate
                                                         C14H3005
      I, 886, 906
                                                            Tetraethyleneglycol monohexyl ether
                                                               IV, 249
C14H27N
   Myristonitrile
                                                         C_{14}H_{31}N
      1, 518, 534, 545, 761, 767, 948, 962, 965,
                                                            Tetradecylamine
         980, 984, 1054, 1088
                                                               1, 519, 535, 547, 761, 767, 949, 963, 966,
      11, 693, 867
                                                                  981, 985, 1056
                                                               II, 651
C114H2802
   Myristic acid
                                                         CamBrH20N0
      II, 206, 208, 214, 233, 244, 247, 357, 362,
                                                            p-Anisylidene-p-bromaniline
          365, 375, 462, 546, 550, 557, 630, 634,
                                                               I, 1197
          865, 866, 977, 1006, 1007, 1010, 1047,
                                                         C14ClH32N
          1053, 1059, 1062, 1064, 1186, 1192,
                                                            Dimethyldodecylammonium chloride
          1193, 1195, 1196
                                                               I, 615
   Isomyristic acid
                                                               IV, 143
      11, 1193-1196
                                                            Tetradecylammonium chloride
C_{11}H_{28}O_{2}
                                                               11, 698
   Lauryl acetate
                                                               IV, 144
      1, 893, 894
                                                         C14H10O3S
   Ethyl laurate
                                                            Phenanthrene-sulfonic acid
      I, 902, 903
                                                               IV, 436
   Methyl tridecanoate
      I, 988
                                                         CihHioN2O2
      II, 594
                                                            Azodibenzoyl
                                                               1, 1023
C14H2803
   14-0xytetradecanoic acid
      11, 235
```

```
C14H11NO2
    3_Benzilmonoxime
        II. 51
C_{14}H_{18}N_{8}0
    Phenyl glyoxalphenylhydrazone
       I, 595, 614
       II, 892
C_{11}H_{12}N_{2}O_{2}
    Dibenzoylhydrazine s.
       1, 1023
C14H12O4S
     ( 2-Naphthyl-sulfide-propionic acid ) (d)
    and (1)
       11, 1268
C14H12O6S2
    4,4'-Dibenzyldisulfonic acid
       IV, 435
C 14H 13 NO
   Anisylidene aniline
       I, 1118
   N,N-Diphenylacetamide
       1, 1120, 1137
C14H13NO2
   p-Hydroxybenzal-p-anisidine
       I, 1197
C_{14}H_{13}N_{2}O_{3}
   o; m; p_Methylbenzoyl-p-nitroaniline
      I, 1244
C_{14}H_{13}N_{5}O_{4}
   pm and mp-Nitrobenzendiazoethylaminonitroben-
   zene
      I, 1245
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```
C_{14}H_{14}N_{2}0_{2}
   p-Azoanisole
       1, 1000, 1191, 1192
   Benzyl hyponitrite
      I, 1044
   Phenetolazophenol
      II, 941
C_{14}H_{14}N_{2}O_{3}
   p-Azoxyanisole
       1, 614, 654, 794, 1022, 1190, 1192, 1193,
          1194, 1196, 1197
       II, 941, 997
C_{14}H_{14}N_{4}0_{7}
   2,4,6-Collidine picrate
       1, 1257
C_{14}H_{14}OS
   Dibenzyl sulfoxide
       I, 848, 877
   p-Tolyl sulfoxide
       1,877
C_{14}H_{14}0Se
   Dibenzyl selenoxide
       I, 877
C14H1402S
   Dianisyl sulfide
       1,840
   Dibenzyl sulfone
       1, 848, 877
   p-Tolyl sulfone
       1, 877
   Benzyl (a-thenyl) acetic acid
       11, 1250, 1271
```

C14BrH903S

 $C_{14}H_{14}O_{3}S$

```
10-Bromphenanthrene-3 (or 6)-sulfonic acid
   p-Methoxyphenyl sulfoxide
                                                                IV, 436
      I, 877
                                                          C14H12N2O5S
C_{14}H_{14}O_{4}S
                                                             bis-p-Nitrobenzyl sulfoxide
   p-Methoxyphenyl sulfone
                                                                I. 1259
       I, 877
                                                          C14H12N2O6S
C14H16N2O3
                                                             bis-p-Nitrobenzyl sulfone
   Phenylveronal
                                                                I, 1259
       I, 1180
                                                          C14H21N3O2S
C14H16N2O6
                                                             Novocaine thiocyanate
    1-Asparagine-acetylmandelate (1) and (d)
                                                                IV, 149
       II, 1258
                                                          C15H11
C14H19N02
                                                             9,9-Dimethylfluorene
    2,4-Diacetoaminobutylbenzene sec. and iso.
                                                               I, 299
      I, 1189
                                                          C15H18
C_{14}H_{20}N_{2}0_{4}
                                                             sec. Amylpahthalene
   Dinitrotetraethylbenzene vic.; sym. and asym.
                                                                1, 511, 580, 649
       I, 1237
                                                                II, 143, 174, 195, 257
C14H20010S2
                                                             2-Amylnaphthalene
    Xantogensuccinic acid
                                                                11, 195
        II, 1242 and 1243
                                                          C_{15}H_{24}
    Ethyl ( carbothiolon ) malic acid
                                                             Caryophyllene
        II, 1242 and 1243
                                                                I, 608
C_{14}H_{29}N0
                                                             2-Pheny1-3-isopropy1-4-methy1pentene-2
   Myristamide
                                                                1, 639
      1, 602, 609, 783, 1007, 1013, 1031, 1036,
                                                          C15H32
         1086, 1150
                                                             Pentadecane
      II, 873
                                                                I. 87
C14H31N02
                                                          C15H1002
   Dodecylamine acetate, Lauryamine acetate,
   Dodecylammonium acetate
                                                             Flavone
       I, 612
                                                                1, 873, 875
       II, 893
                                                                II, 538
       IV, 138
```

```
C_{15}H_{10}O_{3}
   1-Methoxyanthraquinone
       I, 977
       II, 568
C 1 5 H 1 0 0 4
  \alpha and \beta -Benzile orthocarbonic acid
      11, 1249
   5,6 and 5,7-Dioxyflavone
       II, 538
   Methoxyanthraquinone
       II, 943
C15H1005
   3,4,3',4'-Bis ( methylenedioxy ) benzophenone
       I, 872
C15H120
   Chalcone
       II, 537
C_{15}H_{12}O_{2}
   Phenylbenzylglyoxal ketone
       11, 505
   Phenylbenzylglyoxal enol
       11, 505
   2 and 4-0xychalcone
       II, 1174
C_{15}H_{13}N
   Cynnamylideneaniline
       1, 575, 576, 1077, 1078
C,5H,40
   Ditolyl ketone
       1, 872
   Methyl desoxybenzoin
       II, 506
```

```
C15H1402
   Benzyl phenylacetate
      II, 648
  \alpha -Phenylhydrocinnamic acid (d) and (1)
       II, 1251, 1252
C_{15}H_{14}O_{3}
   Benzyl carbonate
       1, 1044
C15H1405
   Guaiacol carbonate
       11, 624
C_{15}H_{16}O_{2}
   Dianisy Imethane
       I, 840
C,5H,603
   \alpha -(2-Naphthoxy) valeric acid (d)
       II, 1268
   \alpha _(2_Naphthoxy) valeric acid (1)
       11, 1267, 1268
 C15H16022
    Dianisyl methane
       1,840
 C15H17N
    N_Ethyl-N-benzyl aniline
       1,939
       II, 836
 C15H18O3
    Santonine and p-Santonine
        1,695
```

C15BrH1,0

C15H1806

Ethyl benzene tricarboxylate

```
I, 1050
   Ethyl benzylidene tartrate
      1.887
C15H2004
   Santonous acid (d)
      II, 1257
   Santonous acid (1)
      II, 1258
   Desmotoposantonous acid (1)
      II, 1257, 1258
C15H220
   Phenyltetramethyl tetrahydropyrane
      II, 450
C15H2606
   Tributyrine
      I, 475
C, 5H3 00
   Diheptyl ketone
      I, 864
C15H3002
   Pentadecanoic acid
      II, 208, 214, 233, 358, 362, 550, 557, 630,
          634, 866, 1007, 1047, 1054, 1062, 1064,
          1187, 1196, 1197
   Isopentadecanoic acid
      11, 1193-1195, 1197
   Methyl myristate
      1, 394, 416, 474, 697, 720, 859, 884, 890
      II. 594
  Ethyl tridecanoate
      I, 902, 903
  Tridecyl acetate
      I, 893, 894
```

```
p'-Bromochalcone
      I, 875
C15C1H902
   1-Chloro-2-methy1-anthraquinone
      I, 1025
C15ClH110
   p'-Chlorochalcone
      I, 875
C15ClH34N
   Dodecyl trimethyl ammonium chloride
      I, 770, 964, 1056
      II, 699
      IV, 144
   Pentadecylammonium chloride
      II, 698
C15H11NO2
   1-Amino-2-methyl-anthraquinone
      I, 1025
C15H15NO
   p-Dimethylaminobenzophenone
      II, 938
C_{15}H_{15}N0_{2}
   Anisal p-anisidine
      I, 1000, 1190, 1192
C15H16N2O
   Dimethyldiphenylurea sym.
      I, 1121, 1184
      11, 936
C_{15}H_{16}N_{2}O_{2}
   p-Azoani solphene tole
       I, 1192, 1193
```

C16H26

```
C15H17N0
   Methylpelletierine
      IV, 131
C15H24N407
   Tripropylammonium picrate
      I, 1258
C15H27N30
   2,4,6-Tri ( dimethylaminomethyl )-phenol
      II, 1090
C15H33NO2
   Tridecylamine acetate
      1,612
      11, 893
C15C1H23N2O
   Aphyllidine hydrochloride
      II, 893
C,6H,0
   Pyrene
      1, 175, 178, 665, 666
      II, 201
   Fluoranthene
      1, 176, 177, 178, 657_658
      II, 205
   Diphenyldiacetylene
      1, 576
C16H14
   Diphenylbutadiene
       I, 170, 504, 575, 576, 640
C,6H20
   Diisopropyl naphthalene
      I, 511, 580, 649
      II, 143, 174, 195, 196, 257
      IV, 777
```

```
Di amy lbenzene
      I, 497, 567, 637
      II, 130, 173, 251
      IV, 776
C 16H30
   4,5-Dibuty1-2,6-Octadiene
      I, 409, 532
   Hexadecine-1
      1, 532, 601
C16Ha2
  Hexadecene
      1, 85, 86, 87, 88, 89, 99
  Cetene
      IV, 771
C16H3h
   Hexadecane
      1, 54, 58, 69, 79, 82, 84, 89, 204, 365,
         403, 404, 599
      II, 29
      III, 1033-1034
   Diisooctyl
      II, 29
C16H12N2
   Benzeneazonaphthalene
      I, 1079
C16H12O2
   Dibenzoylethylene s. cis and trans.
      I, 1023
C16H12O3
   Piperonal acetophenone
      I, 758
   3,4-Methylenedioxychalcone
      II, 1174, 1175
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```
C16H1204
                                                        C16H180
   1,2-Dimethoxyanthraquinone
                                                           Amyl naphthyl ketone 1 and 2
      I, 1025
                                                               I, 873
C16H13N3
                                                         C, 6H, 803
   Methyldiphenyltriazine
                                                           \alpha ( 2-Naphthoxy ) caproic acid (d) and (1)
      1, 572, 1084
                                                               11, 1268
C16H1402
                                                         C16H1804
   Dibenzoylethane s.
                                                            5-0xy-6-methoxyflavone
      I, 1023
                                                               II, 538
C16H14O3
                                                         C16H19N
   3-Benzoylhydratropic acid (d) and (1)
                                                            Dixylylamine s.
      II, 1258
                                                               II, 759
   Phenylacetic anhydride
                                                         C16H28011
      III, 1093
                                                            1-Mannose pentacetate
   Phenylanisylglyoxal ketone
                                                               I, 861
      II, 505
                                                            2-Mannose pentacetate
   Phenylanisylglyoxal enol
                                                               I. 860
      II, 505
                                                         C16H22O11
C16H1404
                                                            1-Glucose pentacetate
   Monooctyl phthalate
                                                               I, 482, 700, 860
      II, 239
                                                            2-Glucose pentacetate
   Di-n-butylphthalate
                                                               I, 700, 860
      I, 386, 489, 886, 888, 907, 912, 920
                                                               II, 616
   Di-isobutylphthalate
                                                            1-Mannose pentacetate
      I, 888, 907
                                                               I, 482, 699
C, 6H, 6N2
                                                            2-Mannose pentacetate
   p-Tolylazine
                                                               I, 482, 700
      I, 1128
                                                         C16H2608
C16H1602
                                                            Diisobutyl diacetyl tartrate (d)
   p-Dimethoxystilbene
                                                               I, 732, 733, 989, 990, 1048
      I, 504, 957, 1000
                                                         C16H3004
   Dibenzylacetic acid
                                                            Amyl adipate
      II, 1250
                                                               1, 478
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Hexadecanedioic acid
                                                         C16H3405
      11, 1001
                                                            Tetraethyleneglycol monooctyl ether
                                                               IV, 250
C_{16}H_{31}N
   Palmi toni trile
                                                         C_{16}H_{35}N
      1, 519, 535, 545, 761, 767, 948, 962, 965,
                                                            Hexadecylamine
         980, 984, 1054, 1058, 1089
                                                               1, 519, 535, 547, 761, 767, 949, 963, 981,
      II, 693, 694, 867
                                                                  985, 1056
                                                               11, 651
C16H32O2
                                                            1-Dioctylamine
   Palmitic acid
                                                               1, 520, 535, 547, 762, 768, 950, 981, 985
      11, 206, 208, 212, 215, 234, 244, 247, 254,
                                                               II, 653
          358, 362, 365, 375, 462, 546, 551, 557,
                                                            2-Dioctylamine
          562, 630, 634, 638, 823, 856-858, 866,
                                                               1, 520, 535, 547, 762, 966, 981, 988, 1056
          974, 977, 982, 983, 991-993, 1000,
          1003, 1006, 1007, 1010, 1047, 1054,
                                                         C<sub>16</sub>BrH<sub>36</sub>N
          1063, 1064, 1068, 1074, 1075, 1187,
                                                            Tetra-n-butylammonium bromide
      III, 1217, 1218
                                                               I, 615
      IV, 745
                                                         C16C1H36N
   Isopalmitic acid
                                                            Hexadecylammonium chloride
      11, 1194-1197
                                                               II, 699
   Tetradecyl acetate
                                                               IV, 144
      I, 894
   Ethyl myristate
                                                         C16H1, N30,
      I, 903
                                                            Naphthalene picrate
                                                               I, 606, 626, 941, 1256
C16H33I
   Cetyl iodide, Hexadecyl iodide, 1-Iodohexade-
                                                         C16H10N408
                                                            Methyltetranitro diphenate-4,6,4',6'
      1, 187, 311, 318, 337, 742
                                                               1, 614, 633, 635, 636, 638, 640, 647
      II, 322
                                                         C16H12N20
C16H340
                                                            Benzene-azo-$-naphthol
   Hexadecyl alcohol, 1-Hexadecanol, Cetyl alco-
                                                               II, 943
      II, 12, 39, 94, 270, 291, 408, 483, 488,
                                                         C16H12NuO6
          582, 587, 675, 690, 888, 897, 1067,
                                                            Naphthalene_trinitroaniline
           1068, 1103, 1113, 1122, 1123, 1131
                                                               I, 1256
      III, 1199
```

IV, 794

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C_{16}H_{14}N_{2}O_{5}
                                                         C16H1802S
   Azophenyl diacetate
                                                             2-Phenylethyl sulfone
      I, 1195
                                                                I, 877
   Methyl azoxybenzoate
                                                         C16H25N0
      I, 1197
                                                            Caprinanilide
C16H15NO2
                                                                1, 602, 611, 784, 1008, 1013, 1032, 1037,
   Anisal-amino acetophenone, Methoxy-p-aminoace-
                                                                   1086, 1174
   tophenone
                                                                II, 882
      I, 1040, 1188
                                                         C16H33NO
C_{16}H_{16}N_{2}O_{2}
                                                             Palmi tamide
   Anisalazine
                                                                1, 602, 609, 783, 1007, 1013, 1032, 1037,
      1. 1128
                                                                   1086, 1150
                                                                II, 873
C16H17NO2
   p-Ethoxy-p-anisidine
                                                         C16H35NO2
       1, 1190, 1191
                                                             Tetradecylamine acetate
   Anisal-p-phenetidine
                                                                I, 613
       I, 1190, 1191
                                                                II, 893
C16H18N20
                                                         C_{16}H_{36}S_{14}S_{1}
   Methylethyldiphenylurea
                                                             Monobutyl sec. tributyl tert. tetrathioortho-
       I, 1185
                                                             silicate
                                                                I. 875
C16H18N2O2
                                                             Tetrabutyl tert, tetrathioorthosilicate
   p-Azophenetole
                                                                I, 875
       I, 1191, 1193, 1194
   p-Methylpropylazophenol
                                                         C16BrH12N3O5
       I, 1192, 1194
                                                             4-Brom-1-naphthylamine 2,6-Dinitrophenol
                                                                II, 1021
C16H18N2O3
   p-Azoxyphenetole
                                                         C16C1H10N3O6
       1, 1040, 1042, 1050, 1193, 1194, 1196, 1197
                                                             Naphthalene-picryl chloride
       II, 998
                                                                I, 1256
C16H180S
                                                         C17H14
    2-Phenylethyl sulfoxide
                                                             I-Benzylnaphthalene
       I, 877
                                                                II, 196
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C_{17}H_{16}O_3
C17H34
                                                            Eugenol benzoate
   Cycloheptadecane
                                                               I, 914
      I, 119
                                                            Isoeugenol benzoate
C12H36
                                                               1, 914, 915
   Heptadecane
                                                            Isochavibetol benzoate
      1, 59, 89, 90, 204, 404, 405
                                                               I, 915
      II, 29, 212
                                                            p-Tolyl p-methoxycinnamate
   Tetrabuty1methane
                                                               1, 915
      I, 90
                                                            Methyl ester ( 2-benzoyl ) hydratropic acid
                                                            (d) and (1)
C12H120
                                                               1, 915
   Phenyl naphthyl ketone 1 and 2
      I, 875
                                                        C17H1604
                                                            Methoxyphenyl methoxycinnamate
C17H12O2
                                                               1, 915
   Benzonaphtho1
      11, 1174
                                                        C17H1805
                                                            3,4,3',4'-Tetramethoxybenzophenone
C12H12O3
                                                               I, 872
   Naphthyl salicylate
      II, 446
                                                        C17H2004
   Betol
                                                           Acetyldesmotroposantonine (1)
      11, 955, 1173
                                                               1, 915
                                                           Acetyldesmotroposantonine (n)
C17H13N
                                                               1, 915, 916
   1 and 2-Benzilidenenaphtylamine
                                                           Acetyldesmotroposantonine (d) and iso.
      I, 1078
                                                               I, 916
C17H140
                                                        C12H22O2
   Cinnamylidenacetophenone
                                                            1-Fenchyl benzoate (d) and (1)
      1, 514, 975
                                                               I, 914
      11, 538
   Dibenzalacetone
                                                        C17H2402
       II, 536, 567
                                                           Menthyl benzoate
                                                               I, 422, 1050
C17H1602
                                                        C17H2403
   4-Ethoxybenzal acetophenone
                                                           1-Menthyl salicylate
      II, 538
                                                              II, 147
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C12H32O4
                                                        C17C1H2302
   di-n-Butyl azelate
                                                           Menthyl-o-chlorbenzoate
      I, 912
                                                              1, 423, 482, 1051
C12H340
                                                        C17C1H38N
   Dioctyl ketone
                                                           Heptadecylammonium chloride
      1, 405, 864, 865, 866
                                                               II, 699
   Heptyl nonyl ketone
      1,864
                                                        C12H13N3O6
   Hexyl decyl ketone
                                                           Naphthalene_trinitrotoluene
      I, 405, 865, 866
                                                               I, 1256
   Amyl undecyl ketone
                                                        C17H17N0
      1, 404, 865, 866
                                                            Benzoyltetrahydroquinaldine (d) and (1)
   Isoamyl undecyl ketone
                                                               I, 1202
      I, 404, 866
                                                            p-Dimethylaminobenzalacetophenone
   Butyl dodecyl ketone
                                                               II, 938
      1, 404, 865
   Propyl tridecyl ketone
                                                         C17H17NO2
      I, 404, 865
                                                            Ethoxybenzal-p-aminoacetophenone
   Ethyl tetradecyl ketone
                                                               I, 1188
      1,865
                                                         C17H19N0
C_{17}H_{34}O_{2}
                                                            p-Benzoylaminobutylbenzene sec. and iso.
                                                               I, 1189
   Methyl palmitate
      1, 394, 416, 474, 697, 720, 860, 884, 890,
                                                         C17H19NO2
         904
                                                            p_Ethoxybenzal-p-phenetidine
      II, 594
                                                               I, 1191
   Ethyl pentadecanoate
      1, 903
                                                         C17H20N2O
   Margaric acid
                                                            Diethyldiphenylurea s.
                                                               1, 641, 649, 1121, 1185, 1186
      II, 208, 215, 234, 358, 362, 551, 557, 631,
                                                               II, 937
          634, 866, 1007, 1047, 1054, 1063, 1064,
                                                            p,p-Tetramethyldiaminobenzophenone
          1187, 1197, 1203, 1204
                                                               1, 659, 1000, 1068, 1102, 1125, 1131,
   Isomargaric acid
                                                                   1144, 1159, 1189
      II, 1194-1198, 1203, 1204
                                                               11, 886, 938, 993
C17Ha60
  Heptadecyl alcohol, Heptadecanol
      11, 292, 1131
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C_{17}H_{20}N_{20}
   p-Ethyl propylazophenol
       I, 1194
C_{17}H_{22}N_{20}
   Tetramethyldiaminobenzhydrol
       II, 105
C17H22N2O6
   Menthy 1-2,4-dinitrobenzoate
       I, 628
C_{17}H_{23}NO_{3}
   Atropine
       I, 1198
C12H23NO4
   Menthyl nitrobenzoate 1-o and p
       1, 628, 1222
C_{17}H_{23}N_30
   Hyoscyamine
       11, 891
C17H36N2S
   Tetra-butylammonium thiocyanate
       I, 615
C17H37NO2
   Pentadecylamine acetate
       I, 613
       II, 893
C<sub>17</sub>H<sub>38</sub>IN
   Amyl-tributylammonium iodide
       I, 615
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```
C 18H12
   Chrysene
      1, 173, 174, 175, 176, 177, 178, 513, 584,
   1,2-Benzanthracene
      I, 176, 177
   Triphenylene
      I, 177
C 18H14
   o and m_Diphenylbenzene
      I, 171
   p-Diphenylbenzene
      I, 167, 171
C18H18
   Retene
      1, 174, 175, 585, 666, 667
      II, 200
C18H24
   Ditert. Butylnaphthalene
      I, 511
      11, 143, 195, 257
C<sub>18</sub>H<sub>30</sub>
   Hexaethylbenzene
      I, 95, 501, 639
      II, 173, 251
   Dodecy1benzene
      I, 564
C 18H36
   1-0ctadecene
      I, 86, 99-367
C 18H38
   Octadecane
      1, 54, 59, 70, 89, 90,204, 365
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C18H15As
                                                          C18H22O2
   Triphenylarsine
                                                             Dihydrostilbestrol rac.
       1, 563, 1074, 1085
                                                                 II, 1145, 1148
                                                             Dihydrostilbestrol meso
C_{18}H_{15}N
                                                                 II, 1149
   Triphenylamine
                                                             Estrone
      I, 1063, 1074
                                                                 II, 506
C_{18}H_{15}P
                                                             Hexoestrol
   Triphenylphosphine
                                                                 II, 1074
      I, 1074, 1085
                                                          C18H22O3
      III, 1139
                                                             Methyl ether of the 1,1-dimethyl-2-ethyl alle-
                                                             nolic acid
C_{18}H_{16}O_{5}
                                                                 II, 252
   5,6,7_Trimethoxyflavone
                                                              ( Methoxynaphthyl ) α a-dimethyl-β-ethyl pro-
      I, 873
                                                             pionic acid
C18H1606
                                                                 11, 1074
   Methyl dibenzoyl glycerate
                                                          C18H2204
      I, 457
                                                             Bornyl hydrogenphthalate (d) and (1)
C18H18O4
                                                                 II, 1250
   Methoxyisoeugenol benzoate
                                                          C18H2302
      I, 915
                                                             Estradiol
   p-Ethoxyphenyl-p-methoxycinnamate
                                                                 II, 506, 1149
      I, 915
                                                          C18H2402
C_{18}H_{18}O_{5}
                                                              1-Menthyl benzoate
   Methyl dibenzoyl glycerate
                                                                 I, 481
      I, 730, 1047
      II, 649
                                                          C18H2603
                                                              Menthyl-o-methoxybenzoate
C18H200
                                                                 1, 423, 481, 1050
   ( Tetramethyl ) bitolyl cyclic oxide
                                                              1-Menthyl mandelate (d) and (1)
      11, 450
                                                                 II, 1150
C_{18}H_{20}O_{2}
                                                          C18H2604
   Stilbestrol
                                                              Diamyl phthalate
      II, 1148, 1149
                                                                 1, 386, 888, 907
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C18H3002
                                                        C18H3403
   \alpha and \beta-Eleostearic acid
                                                           Ricinoleic acid
      II, 857
                                                              II, 235
                                                           9,10-Epoxystearic acid cis. and trans.
C18H3008
                                                              II, 1213
   Dimethyldicaproyl tartrate
                                                           9 and 10-Ketostearic acid
                                                               II, 1213
C18H3202
                                                        C, 8H3 10 1
   Linoleic acid
                                                           Butyl sebacate
      II, 206, 209, 215, 235, 358, 363, 551, 557,
                                                               1, 478, 736, 747, 886, 906
          631, 1007, 1047, 1063, 1065, 1202,
                                                               II, 598, 599
          1206, 1215, 1216
   Stearolic acid
                                                        C 18H35N
      II, 1217
                                                           Stearonitrile
                                                               1, 519, 535, 545, 761, 767, 948, 962, 965,
C18H32016
                                                                  980, 984, 1055, 1058, 1089
   Raffinose
                                                               II, 694, 867
      IV, 322
                                                        C18H360
C, gH3 hO2
                                                           Ethyl pentadecyl ketone
   Oleic acid
                                                               I, 865
      11, 206, 208, 215, 235, 247, 355, 358, 363,
                                                           Propyl tetradecyl ketone
          365, 375, 386, 398, 452, 453, 462, 546,
                                                               I, 865
          551, 557, 562, 626, 631, 635, 837, 865,
                                                           Butyl tridecyl ketone
          978, 1007, 1010, 1047, 1054, 1063,
                                                               I, 865
          1064, 1067, 1074, 1201, 1202, 1205,
                                                           Amyl dodecyl ketone
          1206, 1210, 1215
                                                               I, 865
       III, 1218
                                                           Hexyl undecyl ketone
       IV, 795
                                                               I, 866
   Elaicid acid
                                                           Octyl nonyl ketone
       11, 856, 978, 1202, 1206, 1215
                                                               1, 864, 865
C18H3402
                                                         C18H3602
   3,4-di (p-Hydroxycyclohexyl) hexane rac.
                                                            9,10-Epoxyoctadecyl alcohol cis. and trans.
      II. 1145
                                                               II, 1132
   Isooleic acid
      11, 1202, 1206, 1215
  Petroselenic acid cis. and trans.
      II, 1215
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Stearic acid
     11, 206, 208, 215, 234, 244, 247, 254, 358,
         362, 363, 365, 375, 458, 462, 546, 551,
         557, 562, 631, 635, 638, 837, 856, 977,
         978, 990, 1000, 1006, 1007, 1010, 1047,
         1054, 1063, 1064, 1075, 1083, 1086,
         1090, 1187, 1194, 1196, 1198, 1199,
         1200, 1204-1208
     III, 1218
  Isostearic acid
     II, 1195-1197, 1201, 1204
  Hexadecyl acetate, Cetyl acetate
     I, 894
     II, 636
  Ethyl palmitate
      I, 903, 904
     11, 594
     IV, 59
C18H36O3
  α_0xystearic acid
      II, 1207
C18H3604
  α,β_Dioxystearic acid
      II, 993, 1207
   9,10-Dioxystearic acid 1 and 2
      II, 1213
C18H3606
   Tetraoxystearic acid 1,2,3 and 4
      11, 1214
C 18H37I
   Octadecyliodide
      I, 337
```

```
C 18H380
    Octadecyl alcohol, 1-Octadecanol
       II, 12, 39, 94, 270, 292, 335, 408, 483,
           488, 582, 587, 675, 690, 898, 1103,
           1113, 1122, 1123, 1131
       III, 1199
 C, 8H3 806
    Monooctyl ether of pentaethylene-glycol
       II, 99
       IV, 250
C, 8H3 9N
   Octadecylamine
       1, 519, 535, 547, 761, 767, 949, 963, 966,
          981, 985, 1056
      II, 652, 815
      IV, 72, 73
C18C1H330
   Oleyl chloride
      II, 626
C18C1HLON
   Octadecyl ammonium chloride
      II, 699
C18H15As0
   Triphelylarsine oxide
      I, 1199, 1200
C18H15AsS
   Triphenylarsine sulfide
      I, 1199, 1200, 1201
C18H150P
   Triphenylphosphine oxide
      I, 1199
```

```
C18H1503P
   Triphenyl phosphite
      I, 604, 606, 637
C_{18}H_{15}O_{4}P
   Phenyl phosphate
      I, 1200, 1201
C18H15PS
   Triphenylphosphine sulfide
      I, 1199, 1200
C18H15SSb
   Triphenylstibine sulfide
      1, 1199, 1200, 1201
C18H18N2O4
   Ethyl-p-azobenzoate
      I, 1195
   Salipyrine
      11, 543, 924, 935, 953, 1170
C18H18N2O5
   Ethyl-p-azoxybenzoate
      I, 1195, 1197
C18H18N2O6
   p-Azophenyl diethylcarbonate
      1, 1188, 1192, 1193, 1194, 1195, 1197
      II, 941
C18H19NO2
   p-Dimethylaminobenzal-p-methoxyacetophenone
       11, 938
C18H20N202
```

p-Ethoxybenzalazine

I, 1128

```
C18H22N2O2
   p-Dipropylazophenol
       1, 1193, 1194
C18H27NS
   2-Undecylbenzthiazole
       1, 595, 616, 780, 785, 1012, 1035, 1087
      II. 700
C 18H29N0
   Lauranilide
       1, 602, 611, 784, 1008, 1014, 1032, 1037,
          1086, 1174
       II, 882
C18H30N407
   Tetrapropylammonium picrate
       I, 1257, 1258, 1259
   Tributylammonium picrate
       I, 790
C18H37N0
   Stearamide
       1, 602, 609, 784, 1007, 1013, 1032, 1037,
          1086, 1150
       11, 874, 982
C18H38N2O3
   Octadecylamine nitrate
       IV, 827
C<sub>18</sub>H<sub>39</sub>NO<sub>2</sub>
   Hexadecylamine acetate, Cetylamine acetate
       I, 613
       II, 893
C_{18}H_{15}O_{3}PSe
   Phenyl selenophosphate
       I, 1201
```

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C18H1503PS
                                                         C19H17As
   Phenyl thiophosphate
                                                            Diphenyl-p-tolylarsine
      1, 1200, 1201
                                                               I, 563
C19H16
                                                         C19H17N3
                                                            Triphenylguanidine
   Tripheny lme thane
                                                               I, 571, 977, 1140
      1, 66, 145, 155, 167, 168, 292, 384, 504,
         569-571, 641
                                                         C19H18O3
      II, 135, 178-181
                                                            Dianisalacetone
      111, 1054
                                                               1, 502, 515, 758, 841, 975, 1024
      IV, 668, 777
                                                               11, 537, 567
C19H26
                                                         C19H18O4
   Nonanaphthalene
                                                            5,6-Diacetoxyflavone
      IV, 777
                                                               I, 873
C19H20
                                                         C19H3603
   Nonadecane
                                                            Methyl ricinoleate
      I, 90
                                                               II, 3
C19H13N
                                                         C19H380
   Phenylacridine
                                                            2-Nonadecanone, Methyl heptadecyl ketone
      II, 805
                                                               1, 392, 415, 456, 485, 692, 713, 843, 857,
                                                                   866, 968
C19H1405
   Dipiperonal acetaone
                                                               II, 491
      I, 758
                                                            Caprinone
                                                                1, 392, 414, 456, 713, 857, 861, 866, 968,
C_{19}H_{15}N
                                                                   1016
   Cynnamylidene_2_naphthylamine
                                                               II, 492, 493
      I, 575
                                                         C, 9H3 802
C,9H,60
                                                            9-Methylstearic acid (d) and (1)
   Triphenylcarbinol
                                                                II, 1208, 1209
       11, 135, 140, 506, 657, 670, 673, 677, 906,
                                                            10-Methylstearic acid (d) and (1)
          907, 910, 911, 1042-1044
                                                                1208, 1209
   Cinnamylidenebenzalacetone
                                                            Methyl stearate
       I, 1024
                                                                1, 394, 406, 416, 474, 697, 720, 860, 885,
                                                                   890, 904, 905
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Ethyl margarate I, 903, 904, 905 Nonadecanoic acid II, 1208 C₁₉BrH₄₂N Cetyl trimethylammonium bromide IV, 144 C19H13N3O6 Trinitrotriphenylmethane I, 1164 C19H1704P Phenyl methylphosphate I, 1201 C19H19NO3 Ethyl anisalaminocinnamate I, 1040 C19H39N0 9-Methyloctadecanamide (d) and (1) I, 1151 $C_{19}H_{41}N0_{2}$ Heptadecylamine acetate I, 613 II, 893 C20H14 Benzal-fluorene I, 170 CaoH16 9,10-Dimethyl-1,2-Benzanthracene 1, 176, 177 1,1,2-Triphenylethylene I, 170, 641

II, 252

CaoHao 1-Pheny1-1,3 Butadiene I, 640 CaoHa6 Diphenyloctane I, 145 CaoHaa Diamylnaphthalene I, 511, 580, 649 II, 143, 195, 257 CaoH34 Tetradecy1benzene I, 564 CaoHuo 2-Methylnonadecene I, 409 $C_{20}H_{L2}$ Eicosane 1, 90 CaoBrH13 Benzilidene bromfluorene I, 352 CaoBrH15 Triphenylbromethylene I, 352 $C_{20}H_{12}N_{2}$ 1-Naphthalazine I, 1077 CaoHinNa Azonaphthalene

I, 575, 1079

```
CaoH140a
                                                        CaoHag0a
  β -Dinaphthol
                                                           Ethyl oleate
      II, 937
                                                              I, 906
                                                           Ethyl isooleate
CaoHinon
                                                              I, 906
   Phenyl phthalate
      I, 416, 419, 423, 497, 501
                                                        CaoHhoOa
                                                           Eicosanoic acid
CaoH14Se
                                                              II, 204, 1209
   2,2'-Dinaphthylmonoselenide
                                                           Isoeicosanoic acid
      I; 849
                                                              11, 1196, 1197, 1201, 1204, 1208
CaoH14Se2
                                                           Ethyl stearate
   2,2'-Dinaphthyldiselenide
                                                               1, 406, 474, 860, 885, 904, 905
      I, 849
                                                           Octadecyl acetate
                                                              I, 894
CaoH15NO2
   Benzal-p-aminophenyl benzoate
                                                        C_{20}H_{40}O_{5}
      I, 1189
                                                           Cholic acid
                                                               II, 1203, 1207, 1216, 1217
CaoHisOs
   Methyl dibenzoyltartrate (d) and (1)
                                                        C20H15N3O5
      I, 915
                                                           o and m-Anisolazophenyl nitrobenzoate
                                                               I, 1246
CaoH19N
   Dibenzilaniline
                                                        C20H18N2O5
      I, 972
                                                           Allyl azoxybenzoate
                                                               I, 1197
CaoHag0a
   Ethylene_bishydroquinone diethyl carbonate
                                                        C20H21NO4
      I, 1044
                                                           Papaverine
                                                               1, 1198
   1,4-Di (p-tolyl)-2,3-dimethylpiperazine (d)
                                                        C20H22N2O5
   and (1)
                                                           Propyl azoxybenzoate
      I, 1083
                                                               I, 1197
CaoHao0a
                                                         CaoHauNaOa
   Abietic acid
                                                            Quinine
      11, 206, 218
                                                               II, 105, 887, 925, 936, 955, 1038
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C20H2403S Menthyl benzenesulfonate I, 1052 CaoHa7NO11 Amygdalin II, 890 IV, 736 C20H27N3O4 Geraniol acetoacetate p-nitrophenyl hydrazone I, 1246 Nerol acetoacetate p-nitrophenylhydrazone I, 1246 CaoHuaNO2 Octadecylamine acetate 1, 613 II, 893 IV, 139 $C_{20}H_{30}N_{40}Q_{4}S$ Nicotine sulfate IV, 148 C21H11 1,2,5,6_Dibenzfluorene I, 177, 178 Ca1H16 Methylcholanthrene I, 177, 178 $C_{21}H_{44}$ Heneicosane I, 91

C21H13N

Dibenzacridine
I, 582

 $C_{21}H_{15}N_{3}$ Triphenyltriazine 1, 572, 1084, 1128 C21H1605 Phenyl anisoyl-p-oxybenzoate 1, 915 C21H18S3 Trithiobenzaldehyde α and β I, 854 Ca1Ha1As Tri-p-tolylarsine I, 778 Ca1Ha1N Tribenzylamine 1, 566, 777 $C_{21}H_{22}O_5$ 5,4,4'-Triacetoxyflavone Cyclohexyl anisoy1-p-oxybenzoate I, 915 Ca1Ha806 Tricaproine I, 475 $C_{21}H_{42}O_{2}$ Propyl stearate I, 474, 860, 885 Ethyl nonadecanoate I, 905 Heneicosanoic acid 11, 1209

CasH1h

```
Ca1ClH46N
   Octadecyl trimethyl ammonium chloride
      1, 770, 1056
      11, 699
C21H17NO2
   Tolylal-p-aminophenyl benzoate
       I, 1189, 1190
CalHinNOs
   Anisal_p_aminophenyl benzoate
       I, 1189
C21H17N305
   Phenetolazopheny 1\_o\_ \ and \ \_m\_nitrobenzoate
C_{21}H_{21}O_{1}P
   p-Tolyl phosphate
      I, 795, 1201
C21H22N2O2
   Strychnine (d) and (1)
       1, 1198
C_{21}H_{24}N_{2}0
   p,p-Tetramethyldiaminodibenzalacetone
       1, 659, 1002, 1131, 1188
C21 H26 N407
    Triisoamylammonium picrate
       1,626
C_{2\,1}H_{4\,4}N_2S
    Tetraisoamylammonium thiocyanate
C_{21}H_{21}O_{3}PS
    p-Tolyl thiophosphate
       1, 1201
```

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1,2,5,6-Dibenzanthracene
      I, 176, 177, 582
CasHigNO3
   Ethoxybenzal-p-aminophenyl benzoate
      I, 1189, 1190
CaaHaa0a
   Dioxydiohenyloxide-decamethylenether
      I, 840
CasHagOg
   Dipropyldicaproyl tartrate
      I, 479, 705, 915
C_{22}H_{40}O_{2}
   Behenolic acid
      II, 1217
CaaHuaOa
   Brassidic acid
      11, 637, 1210, 1216
   Erucic acid
      11, 1047, 1059, 1210, 1216
   Isoerucic acid
      II, 1210, 1216
C_{22}H_{141}O_{2}
   Behenic acid
      II, 1201, 1204, 1209, 1210
   Isobehenic acid
      II. 1210
   Butyl stearate
      1, 474, 860, 885, 900, 905
```

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C_{22}H_{23}N_3O_2
                                                           C_{23}H_{44}O_{2}
   Fuchsine
                                                               Methyl brassidate
      11, 891
                                                                  11, 637
C_{22}H_{28}O_{2}S
                                                           C23H460
   Dioxydiphenylsulfide decamethylether
                                                               Laurone
      1,840
                                                                  1, 392, 405, 414, 456, 714, 857, 861, 866,
                                                                     968, 1016
C22H29N0
                                                                  II, 493
   N,N'-Diphenylcaprinamide
      1, 603, 611, 784, 1008, 1032, 1037, 1087,
                                                            C23H4602
          1179
                                                               Amyl stearate
      II, 884
                                                                  I, 386
                                                               Methyl behenate
CaaHa7NO
                                                                  1, 905
   Palmi tanilide
                                                               Methyl isobehenate
      1, 602, 611, 784, 1008, 1014, 1033, 1037,
                                                                  I, 905
          1087, 1174
                                                               Isotriacosanoic acid
      II, 883
                                                                  11, 1209
C22H39N407
                                                               Tricosanoic acid
   Tetrabutylammonium picrate
                                                                  11, 1209, 1211
      11, 913
                                                            C23H26N20
C_{22}H_{45}NO_{2}
                                                               Tetramethy 1-p-diamino-tripheny lcarbinol
   Cyclohexylamine palmitate
                                                                  II, 676
      I, 1169
                                                            C_{24}H_{18}
C_{23}H_{148}
                                                               Triphenylbenzene
   Tricosane
                                                                  I, 572
       1, 91
                                                            C24H50
C_{23}H_{27}N_3
                                                               Tetracosane
   Tetramethyl-p-diamino-triphenylmethylamine
                                                                  I, 91
      II, 676
                                                            CauHaoSi
C23H3002
                                                               Silicium tetraphenyl, Tetraphenylsilicane
    Dioxydiphenylmethane-decamethylenether
                                                                  I, 171
       1,840
                                                                  111, 1056, 1140
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C_{24}H_{42}O
CanHanN
                                                              p-0xyphenyloctadecane
   Dibenzy 1-2-naphthy lamine
                                                                 11, 1084
      I, 1134
                                                              Butyl phthalate
C_{24}H_{22}O_{2}
                                                                 I, 747
   2,4-Dibenzoylbutylbenzene sec, and iso,
                                                           CanHu602
      1,873
                                                              Ethyl brassidate
C_{24}H_{36}O_{4}
                                                                 II, 637
   Octyl phthalate
                                                           C_{24}H_{48}O_{2}
      1, 911
                                                              Lignoceric acid
   2-Ethylhexyl phthalate
                                                                  11, 1201, 1205, 1209, 1211
      I, 912
                                                              Tetracosanoic acid
C24H3 8O4
                                                                  II, 1210, 1211
   Apocholic acid
                                                           C25H5002
      II, 212, 562, 1067, 1084, 1203, 1208, 1213
                                                              Pentacosanoic acid
   Dioctyl phthalate
                                                                  II, 1211, 1212
      1, 386
                                                              Isopentacosanoic acid
C24H4002
                                                                  II, 1205, 1208
   Cholamic and Allocholamic acid
                                                              3-Methyltetracosanoic acid (d) and (1)
      11, 1243
                                                                  II, 1212
                                                              Methyl lignocerate
C_{2h}H_{h,0}O_{h}
                                                                  1, 905
   Bornyl succinate (1)
                                                              Methyl tetracosanate
      1, 911
                                                                  I, 905
   Isobornyl succinate (1)
      I, 911
                                                           C_{24}H_{51}N
   Desoxycholic acid
                                                              Didodecylamine
      II, 212, 562, 864, 865, 1068, 1203, 1207
                                                                  1, 520, 547, 762, 768, 950, 963, 966, 981,
   Hyodesoxycholic acid
                                                                     985
      11, 1068, 1203, 1207, 1216, 1217
                                                              Trioctylamine
                                                                  1, 520, 535, 548, 768, 950, 967, 981, 986
C_{24}H_{40}O_{5}
                                                                  II, 655
   Cholic acid
                                                              Dilaurylamine
      II, 865, 1068
                                                                  II, 653
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C24BrH4702
   \alpha -Bromtetracosanic acid
       11, 1235
  \alpha -Bromlignoceric acid
       II, 1235
C_{24}H_{27}N_3O_3
   Aniline pyrogallate
       IV, 146
CanHaaNO
   N,N_Diphenyllauramide
       1, 603, 611, 784, 1008, 1014, 1032, 1037,
          1087, 1179
       11, 885
CauHa 9NS
   2-Heptadecylbenzthiazole
       1, 616, 780, 785, 1036
      II, 700
C_{24}H_{41}N0
   Stearanilide
      1, 602, 611, 784, 1008, 1014, 1033, 1037,
          1087, 1174, 1175
      II, 883
C 24 H47 NO3
   Hexanolamine oleate
      IV, 139
C_{24}H_{49}NO_2
   Cyclohexylamine stearate
      1, 1169, 1170
CauHaoOASa
   Diphenylarsine oxide
      I, 630
```

```
C_{25}H_{28}N_{2}O_{8}
   Stychnin tartrate
      IV, 279
Ca6H16
   bis (Diphenylene-ethylene)
      I, 641
Ca6H18
   9,10-Diphenylphenanthrene
      I, 170
Ca6Hao
   Tetraphenylethylene
       1, 170, 171
Ca6H54
   Hexacosane
       1, 91, 92, 405
C26H5004
    2-Ethyl hexyl sebacate
       1, 911, 912
C26H5202
    Cetyl caprinate
       I, 902
    Lauryl myristate
       I, 902
    Isohexacosanoic acid
       II, 1208, 1209, 1210-1212
    Hexacosanoic acid
       II, 1211, 1212
 C_{26}H_{54}0
    Hexacosanol
       11, 1131, 1132
```

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C26H55N
                                                         C27H460
   Ditridecylamine
                                                             Cholesterol
                                                                II, 327, 888, 890, 891, 1074, 1075, 1131,
      1, 548, 762, 768, 950, 963, 966, 982, 985
      11, 653, 654
                                                                    1146
                                                                IV, 828
C_{26}H_{40}N_{2}0_{2}
   2,2-Dipyridylamine palmitate
                                                          C27H480
      1, 1169, 1170, 1206
                                                             Cholestanol
                                                                 11, 1146
C26H46N407
                                                             Epicholestanol
   Tetraisoamylammonium picrate
                                                                 II, 1146
      1, 1259
                                                              Coprosterol
      II, 969
                                                                 11, 1146
C_{27}H_{46}
                                                              Epicoprosterol
   Cholestene
                                                                 II, 1146, 1147
      1, 128
                                                           C27H5006
C27H48
                                                              Tricaprylin
   3_Sitostane
                                                                 1, 386, 475
      I, 127
                                                           C27H540
   Cholestane
                                                              Myristone
      I, 127, 128
                                                                 I, 414, 457, 714, 866, 867
   Stigmastate
                                                                 II, 493, 494
      I, 127, 128
   Allo-1-ergostane
                                                           C27H5402
      I, 128
                                                               Heptacosanoic acid
   Koprostane
                                                                  II, 1212
      1, 128
                                                            C27H560
C27H56
                                                               Heptacosanol
   Heptacosane
                                                                  11, 1132
      I, 92
                                                            C27H32N2O8
                                                               Brucin acid tartrate
C27C1H45
   Cholesteryl chloride
                                                                  IV, 279
      II, 327
                                                           C27H39N07S
                                                              1-Hyoscyamine d camphorsulfonate
                                                                 IV, 150
```

```
CaBH58
   Octacosane
       I, 91, 92
CaBHaa06
   Ethylene bishydroquinone dibenzoate
C28H38019
   Cellobiose-1-octacetate
      II, 616
C_{28}H_{42}O_{4}
   1-Menthyl phthalate
      I, 482
C28H440
   Ergosterol
      II, 1147
   Calciferol
      II, 1147, 1148
   Lumisterol
      II, 1148
   Pyrocalciferol
      II, 1148
   Vitamine D
      II, 1148
   Pyrovitamine
      II, 1148
CasHu60
   Epihydroergosterol
      II, 1147
   Dihydroergosterol
      II, 1147
   Epidihydrolumisterol
      II, 1147
   Dihydrolumisterol
      II, 1147, 1148
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C_{28}H_{46}O_{2}
   Cholesteryl formate
      I, 880
C28H500
   Allo-a-ergostanol
      II, 1146
   Ergostanol
       II, 1147
C_{28}H_{56}O_{2}
   Ethyl hexacosanate
       I, 905
    Octacosanoic acid
       II, 1212
 C28H580
    Octacosanol
       11, 1131, 1132
 Ca8H59N
    Ditetradecylamine
       1, 520, 548, 762, 768, 950, 963, 966, 982,
           986
       11, 654
 CagHaaN406
    Anisolazophenyl oxalate
        I, 1195
 C28H41N0
    N,N'-Diphenylpalmitamide
        1, 603, 611, 784, 1008, 1014, 1032, 1038,
            1087, 1179
        II, 885
  C_{28}H_{14}N_{2}O_{2}
     2,2'-Dipyridylamine stearate
        I, 1169, 1170, 1206
```

Ca9H60

Nonacosane

I, 92 C29H480 Stigmasterol II, 884, 1039, 1075 Phytosterol 11, 1075 CagHug0a Cholesteryl acetate I, 895 $C_{29}H_{50}O_{2}$ Cholestanol acetate I, 895 **Epicoprosteryl** I, 895 C29H520 ? -Sitostanol II, 1146 CagHs gOa Nonacosanoic acid II, 1212 Montanic acid 11, 1213 C29H600 Nonacosanol 11, 1132 $C_{29}H_{24}N_4O_6$ Anisolazophenyl malonate I, 1195 $C_{30}H_{50}$ Squalen 1, 151

CaoH62 Triacontane I, 92 CaoHa60a Ethylene_bishydroquinone dianisoate I, 841, 915, 1044 C30H4602 Ergosteryl acetate I, 896 C30H4802 Dihydroergosteryl acetate I, 895, 896 Epidihydroergosteryl acetate I, 895 C30H5002 Cholesteryl propionate I, 1040 C30H6002 Octocosane acetate I, 894 Ethyl octacosanoate I, 905, 906 Triacontanoic acid 11, 1212, 1213 CaoHea0 Triacontanol II, 1132 C30H63N Dipentadecylamine 1, 548, 762, 768, 950, 964, 967, 982, 986 II, 654

 $C_{30}H_{26}N_{4}0_{6}$ Phenetolazophenyl oxalate 1, 1195, 1196 CaoHusNO N,N'_Diphenylstearanilide 1, 603, 611, 784, 1008, 1014, 1032, 1038, 1087, 1179 II, 886 C3 1 H64 Hentriacontane I, 91, 92, 93 C31H52O2 Cholesteryl butyrate 1, 880, 895 Cholesteryl isobutyrate I, 1042 C31H620 **Palmitone** 1, 393, 414, 457, 714, 867, 1016 11, 494 C31H28N406 Anisolazophenyl glutarate I, 1195 Phenetolazophenyl malonate I, 1195, 1196 $C_{31}H_{64}N_{8}S$ Tributylhexadecylammonium thiocyanate Ca2H66 Dotriacontane

1, 44, 51, 59, 70, 80, 82, 84, 85, 92, 93,

205, 373, 405, 406, 529, 599

II, 29

III, 1034 IV, 771 C32H5202 1 and 2-Phytosteryl 1, 895 C38H5408 Cholesteryl valerate 1, 880, 895 C32H6402 Spermaceti I, 406 Cetyl palmitate I, 416, 474, 509 Triacontane acetate I. 894 Ethyl triacontanoate I, 906 Dotriacontanoic acid II, 1213 C32H660 Dotriacontanol II, 1132 C32H660S Hexadecyl sulfoxide 1,876 C32H6602S Hexadecyl sulfone I, 876 C33H6206 Tricaprin I, 475, 829, 937

II, 600

C35H700

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C33H32N406
   Anisolazophenyl pimelate
      I, 1195
   Phenetolazophenyl glutarate
      1, 1195
C34H70
   Tetratriacontane
      1, 93
C34H5002
   Cholesteryl benzoate
      I, 1050
C_{34}H_{68}O_{8}
   Dotriacontane acetate
      I. 894
   Ethyl dotriacontanoate
      I, 906
   Tetratriacontanoic acid
      II. 1213
C34H700
   Tetratriacontanol
       II. 1132
C34H70N2S
   Triamyloctadecylammonium thiocyanate
       1,616
C34H48I6N4016
    bis ( methylglucamine ) salt of adipic acid
    bis ( 2,4,6_triiodo_3_carboxyanilide )
       IV, 151
C35H72
    Pentatriacontane
       1, 93
       11, 212
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Stearone
      1, 393, 414, 457, 714, 867, 1016
      II, 494
C35H36N406
   Anisolazophenyl azelate
      I, 1195
C36H18
   Decacyclene
      I, 173, 174, 175, 176, 585
C36H74
   Hexatriacontane
      I, 93
C36H7202
   Octadecyl stearate
      I, 386
   Tetratriacontane acetate
      I, 894
   Ethyl tetratriacontanoate
       I, 906
C36H25N
   Dioctadecylamine
       1, 520, 548, 768, 967, 982, 986
       II, 655
   Tridodecylamine
       1, 520, 536, 548, 762, 768, 950, 967, 982,
          986
C36H75N
   Trilaurylamine
       II, 656
C 2 7 H 4 0 N 4 O 6
    Phenetolazophenyl azelate
       I, 1196
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C_{a\ 8}H_{4\ 6}N_{4}0_{6}S
                                                             C_{54}H_{111}N
    Cinchonidine sulfate
                                                                 Trioctadecylamine
       IV, 149
                                                                    1, 520, 536, 548, 762, 768, 950, 967, 982,
C3 9H2406
                                                                    II, 656
    Trilaurin
       1, 475, 698, 829, 907, 937
                                                              C57H1106
                                                                 Olive oil
C39H81N3
                                                                    IV, 788
    1,3,5-Tridodecylhexahydro-sym_triazine
       1, 523, 558, 765, 965, 984
                                                              C57H9806
       II, 697
                                                                 Isolin
                                                                     I, 386
C_{40}H_{50}N_{4}0_{8}S
   Quinine sulfate
                                                              C57H10406
       IV, 149
                                                                 Triolein
                                                                     1, 386, 479, 870, 908, 909
C<sub>43</sub>H<sub>88</sub>
                                                                     11, 595, 616, 617
   Tritetracontane
       II, 148, 212
                                                              C57H10406
                                                                 Triricinolein
C_{44}H_{40}O_{2}
                                                                     1, 388, 394, 398, 417, 422, 424, 477, 487,
   Cyclohexane-1,4-diol-ditrityl ether cis. +
                                                                        497, 861, 909, 937, 1047
   trans.
                                                                     II, 617
      I, 835
                                                             C_{57}H_{110}O_{6}
C45H8606
                                                                Tristearine
   Trimyristin
                                                                    1, 386, 394, 406, 476, 509, 698, 861, 875,
      I, 476, 698, 829, 937
                                                                       886, 907, 908, 909, 937, 989
                                                                    II, 638
C51H9806
                                                               C 5 7 H 1 1 7 N 3
   Tripalmitin
                                                                   1,3,5-Trioctadecylhexahydrosym-triazine
      1, 386, 476, 698, 829, 907, 908, 909
                                                                      I, 523, 558, 765, 984
      II, 638
C53H10006
   2-01eo-1,3-dipalmitin
      I, 909
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I, 406, 419

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Dynamo oil
Albumine
                                                           I, 406
   IV, 127
                                                        Fluorothene ( polychlorotrifluoroethylene )
Complex ( Aminobenzoic acid . Melanin acid )
   II, 838, 990, 997
                                                           (C_2C1F_3)_n
                                                            I, 747
Aromatic oil
                                                        Gas oil
   1, 22, 41, 52, 55
                                                            I, 22, 406
                                                        Gelatine
Barbituric acid derivatives :
Diethyl, Allylisopropyl, Propyl (3-methyl),
                                                            IV, 127
Dipropyl, Ethyl propyl, Ethyl butyl, Propyl
                                                        Humic acid
butyl, Ethyl ( 1-methyl-butyl )
                                                           II, 838, 990, 997
   11,1157
                                                        Kerosene
Ethyl propyl, Isopropyl allyl, Butylallyl,
                                                           I, 205, 369
Isobutylallyl, Dipropyl, Ethylbutyl, Propyl-
butyl, Propyl ( 3-methylbutyl ), Allyl butyl,
                                                        Lanolin
Propylisopropyl, Isopropylallyl, Diallyl
                                                           I, 406
   II,1158
                                                        Linseed oil
Benzine
                                                           I, 416, 474, 861
   I, 406
                                                           II, 617
Benzomelanin acid
                                                        Machine oil
   II, 989, 997
                                                           I, 406
Bovine serum albumine
                                                        Melanin acid
   IV, 127
                                                           II, 838
Castor oil
                                                       Methyl polycrylate
   I, 416, 419, 497
                                                       (C_{\mu}H_6O_{\mu})_n
Colza oil
   I, 861
                                                           I, 493
Cod liver oil
                                                        Mobiloil
   II, 617
                                                           I, 55, 61, 76, 101, 406
Compressor oil
                                                       Naphta
   I, 406
                                                          I, 22
Cottonseed oil
                                                       Naphtenic oil
   I, 909
                                                          I, 22, 41, 47, 52, 55
   II, 617
                                                       Neno
Crystal oil
                                                          I, 1226, 1236
   1, 32, 41
                                                       Nitrocellulose
Cylinder oil
                                                          I, 1011, 1020
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Nujol ( Paraffin oil )
   111, 1034
Orange oil
   II, 468
Paraffin oil
   1, 22, 32, 41, 47, 52, 55
   II, 30
Paraffin
   1, 101, 205, 373, 406, 586, 529, 600
   II, 212
 Peanut oil
    II, 617
 Petroleum
    (C_nH_{2n}+2)
    I, 100. 205, 406, 600
    II, 148
 Petroleumether
    I, 205
Polyvinylacetate (C_4H_60_2)<sub>n</sub>
    I, 474
Polyvinylcarbazol (C_4H_6O_2)<sub>n</sub>
    I, 567, 635
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Polyvinyl chloride (C_{14}ClH_3)<sub>n</sub>
   I, 220
Polystyrene (C_8H_8)<sub>n</sub>
   I, 165, 166, 515
Sarcomelanin acid
   II, 838, 989, 997
Sepiamelanin acid
   11, 838, 989, 997
Sesame oil
   1, 870
Turpentine
   I, 100, 126, 127
Transformator oil
   1, 406
Turbine oil
   I, 406
Vaseline oil
   1,406
   11, 30
Voltoil
    I, 406
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